Basics about health and medicine

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Health is a state of complete physical, mental, and social well-being, and not just the absence of disease or infirmity. Medicine is the science and practice of the diagnosis, treatment, and prevention of disease. It encompasses a wide range of healthcare practices evolved to maintain and restore health by the prevention and treatment of illness. Medicine has been practiced for thousands of years, with the first recorded accounts dating back to ancient civilizations in Egypt, Greece, and Rome. Today, modern medicine continues to evolve and develop, with new treatments and technologies being discovered and developed all the time. However, despite the many advances in healthcare, there are still many challenges and issues that need to be addressed, such as access to healthcare, the rising cost of treatment, and the growing burden of chronic diseases.

Ismael Tabuñar Fortunado: an Engineer, an author, an inventor, a poet, a lyricist, a novelist, a fellow candidate, a theorist, journal reviewer, writer and a researcher. He is from Caloocan City, Philippines.

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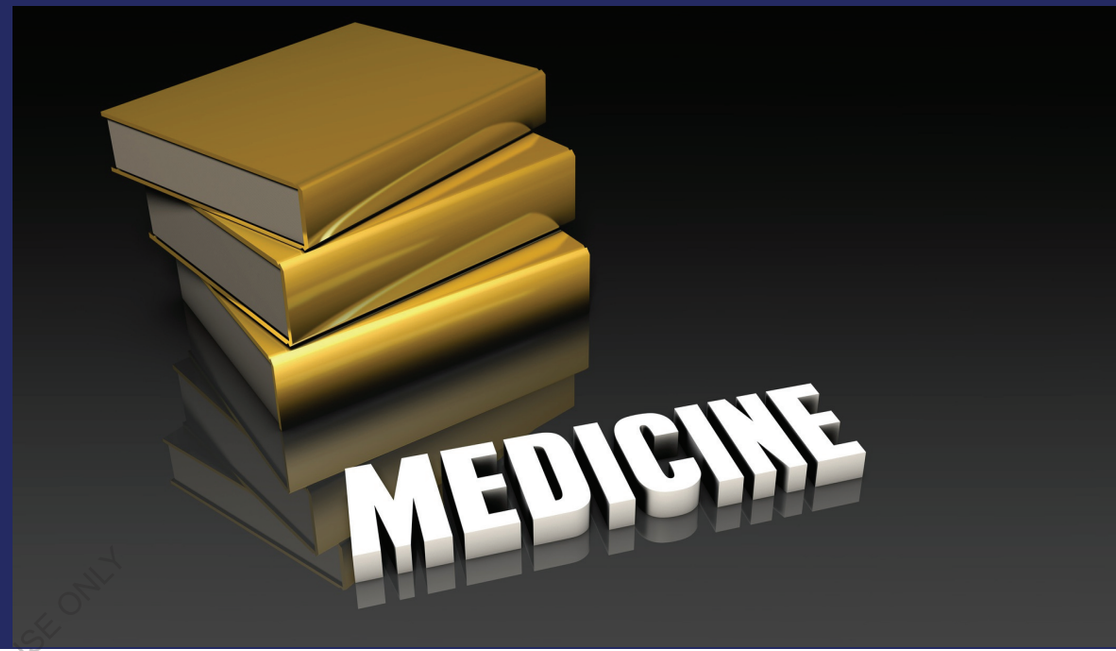

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I want to dedicate my book/s to my parents Manolo and Jeanette, grandparents Lucia, Celedonio, Arsenio and Trinidad, Mimi, Melba, Evelyn, Amelia, my other grandparents, my relatives, my friends, mentors, colleagues, neighbors, acquaintances and especially to God who created us.

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24 Quotes About Medicine For All Budding Doctors

1. "Every man is the builder of a temple, called his body, to the god he worships, after a style purely his own, nor can he get off by hammering marble instead. We are all sculptors and painters, and our material is our own flesh and blood and bones."
- Henry David Thoreau.

2. "Let the young know they will never find a more interesting, more instructive book than the patient himself."
- Giorgio Baglivi.

3. "The art of medicine consists of amusing the patients while nature itself cures the disease."
- Voltaire.

4. "Medicine is as close to love as it is to science, and its relationships matter even at the edge of life itself."
- Rachel Naomi Remen.

5. "Wherever the art of Medicine is loved, there is also a love of Humanity."
— Hippocrates.

6. "Laughter is the tonic, the relief, the surcease for pain."
- Charlie Chaplin.

7. "Anywhere you have extreme poverty and no national health insurance, no promise of health care regardless of social standing, that's where you see the sharp limitations of market-based health care."
- Paul Farmer.

Quotes About Food As Medicine

Here are some food as medicine quotes that we have collected for you.

8. "Healthy does not mean starving yourself ever. Healthy means eating the right food in the right amount."
- Karen Salmansohn.

9. "The body to has its rights, and it will have them: they cannot be trampled on without peril. The body ought to be the soul's best friend. Many good men however have neglected to make it such: so it has become a fiend and has plagued them.
- Augustus William Hare.

10. "Physicians won't make your health. Nutritionists won't make you slim... Ultimately, you have to take responsibility. Save yourself."
- Naval Ravikant.

11. "Your health is what you make of it. Everything you do and think either adds to the vitality, energy, and spirit you possess or takes away from it."
- Ann Wigmore.

12. "Nothing will benefit human health and increase the chances for survival of life on Earth as much as the evolution to a vegetarian diet."
- Albert Einstein.

13. "The wise man should consider that health is the greatest of human blessings. Let food be your medicine."
- Hippocrates.

14. "Let food be thy medicine and medicine be thy food."
- Hippocrates.

15. "Remember, too, that at a time when people are very concerned with their health and its relationship to what they eat, we have handed over the responsibility for our nourishment to faceless corporations."
- Lynne Rossetto Kasper.

Funny Quotes About Medicine

Here are some funny medicine quotes to tickle your funny bone!

16. "It's kinda scary when a doctor asks your price range."
- Tom Wilson.

17. "Those who think they have no time for healthy eating will sooner or later have to find time for illness and the hospital."
– Edward Stanley.

18. "Medical school is like eating an elephant. You just have to do it one bite at a time."
- Samer Benz.

19. "You may not be able to read a doctor's handwriting and prescription, but you'll notice his bills are neatly typewritten."
- Earl Wilson.

20. "The doctor of the future will give no medicine but will interest his patients in the care of the human frame, in diet and in the cause and prevention of disease."
- Thomas A. Edison.

21. "Hospitals should be arranged in such a way as to make being sick an interesting experience. One learns a great deal sometimes from being sick."
- Alan Wilson Watts.

Inspirational Quotes About Doctors

We all appreciate the hard work of doctors, physicians, nurses, and other healthcare professionals so much. Are you a budding physician? Why not read these inspiring quotes about doctors to learn more about this highly skilled profession?

23. "Each patient carries his own doctor inside him."
- Norman Cousin.

24. "There are only two sorts of doctors: those who practice with their brains, and those who practice with their tongues."
- William Osler.

History of Medicine

history of medicine, the development of the prevention and treatment of disease from prehistoric and ancient times to the 21st century.

Medicine and surgery before 1800

Early medicine and folklore

Unwritten history is not easy to interpret, and, although much may be learned from a study of the drawings, bony remains, and surgical tools of early humans, it is difficult to reconstruct their mental attitude toward the problems of disease and death. It seems probable that, as soon as they reached the stage of reasoning, they discovered by the process of trial and error which plants might be used as foods, which of them were poisonous, and which of them had some medicinal value. Folk medicine or domestic medicine, consisting largely in the use of vegetable products, or herbs, originated in this fashion and still persists.

But that is not the whole story. Humans did not at first regard death and disease as natural phenomena. Common maladies, such as colds or constipation, were accepted as part of existence and dealt with by means of such herbal remedies as were available. Serious and disabling diseases, however, were placed in a very different category. These were of supernatural origin. They might be the result of a spell cast upon the victim by some enemy, visitation by a malevolent demon, or the work of an offended god who had either projected some object—a dart, a stone, a worm—into the body of the victim or had abstracted something, usually the soul of the patient. The treatment then applied was to lure the errant soul back to its proper habitat within the body or to extract the evil intruder, be it dart or demon, by counterspells, incantations, potions, suction, or other means.

One curious method of providing the disease with means of escape from the body was by making a hole, 2.5 to 5 cm across, in the skull of the victim—the practice of trepanning, or trephining. Trepanned skulls of prehistoric date have been found in Britain, France, and other parts of Europe and in Peru. Many of them show evidence of healing and, presumably, of the patient's survival. The practice still exists among some tribal people in parts of Algeria, in Melanesia, and perhaps elsewhere, though it is fast becoming extinct.

Magic and religion played a large part in the medicine of prehistoric or early human society. Administration of a vegetable drug or remedy by mouth was accompanied by incantations, dancing, grimaces, and all the tricks of the magician. Therefore, the first doctors, or "medicine men," were witch doctors or sorcerers. The use of charms and talismans, still prevalent in modern times, is of ancient origin.

Apart from the treatment of wounds and broken bones, the folklore of medicine is probably the most ancient aspect of the art of healing, for primitive physicians showed their wisdom by treating the whole person, soul as well as body. Treatments and medicines that produced no physical effects on the body could nevertheless make a patient feel better when both healer and

patient believed in their efficacy. This so-called placebo effect is applicable even in modern clinical medicine.

The ancient Middle East and Egypt

The establishment of the calendar and the invention of writing marked the dawn of recorded history. The clues to early knowledge are few, consisting only of clay tablets bearing cuneiform signs and seals that were used by physicians of ancient Mesopotamia. In the Louvre Museum in France, a stone pillar is preserved on which is inscribed the Code of Hammurabi, who was a Babylonian king of the 18th century BCE. This code includes laws relating to the practice of medicine, and the penalties for failure were severe. For example, "If the doctor, in opening an abscess, shall kill the patient, his hands shall be cut off"; if, however, the patient was a slave, the doctor was simply obliged to supply another slave.

Greek historian Herodotus stated that every Babylonian was an amateur physician, since it was the custom to lay the sick in the street so that anyone passing by might offer advice. Divination, from the inspection of the liver of a sacrificed animal, was widely practiced to foretell the course of a disease. Little else is known regarding Babylonian medicine, and the name of not a single physician has survived.

When the medicine of ancient Egypt is examined, the picture becomes clearer. The first physician to emerge is Imhotep, chief minister to King Djoser in the 3rd millennium BCE, who designed one of the earliest pyramids, the Step Pyramid at Ṣaqqārah, and who was later regarded as the Egyptian god of medicine and identified with the Greek god Asclepius. Surer knowledge comes from the study of Egyptian papyri, especially the Ebers papyrus and Edwin Smith papyrus discovered in the 19th century. The former is a list of remedies, with appropriate spells or incantations, while the latter is a surgical treatise on the treatment of wounds and other injuries.

Contrary to what might be expected, the widespread practice of embalming the dead body did not stimulate study of human anatomy. The preservation of mummies has, however, revealed some of the diseases suffered at that time, including arthritis, tuberculosis of the bone, gout, tooth decay, bladder stones, and gallstones; there is evidence too of the parasitic disease schistosomiasis, which remains a scourge still. There seems to have been no syphilis or rickets.

The search for information on ancient medicine leads naturally from the papyri of Egypt to Hebrew literature. Though the Bible contains little on the medical practices of ancient Israel, it is a mine of information on social and personal hygiene. The Jews were indeed pioneers in matters of public health.

Traditional medicine and surgery in Asia

India

Indian medicine has a long history. Its earliest concepts are set out in the sacred writings called the Vedas, especially in the metrical passages of the Atharvaveda, which may possibly date as far back as the 2nd millennium BCE. According to a later writer, the system of medicine called Ayurveda was received by a certain Dhanvantari from the god Brahma, and Dhanvantari was deified as the god of medicine. In later times his status was gradually reduced, until he was credited with having been an earthly king who died of snakebite.

The period of Vedic medicine lasted until about 800 BCE. The Vedas are rich in magical practices for the treatment of diseases and in charms for the expulsion of the demons traditionally supposed to cause diseases. The chief conditions mentioned are fever (*takman*), cough, consumption, diarrhea, edema, abscesses, seizures, tumours, and skin diseases (including leprosy). The herbs recommended for treatment are numerous.

The golden age of Indian medicine, from 800 BCE until about 1000 CE, was marked especially by the production of the medical treatises known as the *Charaka-samhita* and *Sushruta-samhita*, attributed respectively to Charaka, a physician, and Sushruta, a surgeon. Estimates place the *Charaka-samhita* in its present form as dating from the 1st century CE, although there were earlier versions. The *Sushruta-samhita* probably originated in the last centuries BCE and had become fixed in its present form by the 7th century CE. Of somewhat lesser importance are the treatises attributed to Vagbhata. All later writings on Indian medicine were based on these works.

Because Hindus were prohibited by their religion from cutting the dead body, their knowledge of anatomy was limited. The *Sushruta-samhita* recommends that a body be placed in a basket and sunk in a river for seven days. On its removal the parts could be easily separated without cutting. As a result of these crude methods, the emphasis in Hindu anatomy was given first to the bones and then to the muscles, ligaments, and joints. The nerves, blood vessels, and internal organs were very imperfectly known.

The Hindus believed that the body contains three elementary substances, microcosmic representatives of the three divine universal forces, which they called spirit (air), phlegm, and bile (comparable to the humours of the Greeks). Health depends on the normal balance of these three elementary substances. The seven primary constituents of the body—blood, flesh, fat, bone, marrow, chyle, and semen—are produced by the action of the elementary substances. Semen was thought to be produced from all parts of the body and not from any individual part or organ.

Both Charaka and Sushruta state the existence of a large number of diseases (Sushruta says 1,120). Rough classifications of diseases are given. In all texts, “fever,” of which numerous types are described, is regarded as important. Phthisis (wasting disease, especially pulmonary tuberculosis) was apparently prevalent, and the Hindu physicians knew the symptoms of cases likely to terminate fatally. Smallpox was common, and it is probable that smallpox inoculation was practiced.

Hindu physicians employed all five senses in diagnosis. Hearing was used to distinguish the nature of the breathing, alteration in voice, and the grinding sound produced by the rubbing together of broken ends of bones. They appear to have had a good clinical sense, and their discourses on prognosis contain acute references to symptoms that have grave import. Magical beliefs still persisted, however, until late in the classical period; thus, the prognosis could be affected by such fortuitous factors as the cleanliness of the messenger sent to fetch the physician, the nature of his conveyance, or the types of persons the physician met on his journey to the patient.

Dietetic treatment was important and preceded any medicinal treatment. Fats were much used, internally and externally. The most important methods of active treatment were referred to as the "five procedures": the administration of emetics, purgatives, water enemas, oil enemas, and sneezing powders. Inhalations were frequently administered, as were leeching, cupping, and bleeding.

The Indian materia medica was extensive and consisted mainly of vegetable drugs, all of which were from indigenous plants. Charaka knew 500 medicinal plants, and Sushruta knew 760. But animal remedies (such as the milk of various animals, bones, gallstones) and minerals (sulfur, arsenic, lead, copper sulfate, gold) were also employed. The physicians collected and prepared their own vegetable drugs. Among those that eventually appeared in Western pharmacopoeias were cardamom and cinnamon.

As a result of the strict religious beliefs of the Hindus, hygienic measures were important in treatment. Two meals a day were decreed, with indications of the nature of the diet, the amount of water to be drunk before and after the meal, and the use of condiments. Bathing and care of the skin were carefully prescribed, as were cleansing of the teeth with twigs from named trees, anointing of the body with oil, and the use of eyewashes.

In surgery, ancient Hindu medicine reached its zenith. Operations performed by Hindu surgeons included excision of tumours, incision and draining of abscesses, punctures to release fluid in the abdomen, extraction of foreign bodies, repair of anal fistulas, splinting of fractures, amputations, cesarean sections, and stitching of wounds.

A broad array of surgical instruments were used. According to Sushruta, the surgeon should be equipped with 20 sharp and 101 blunt instruments of various descriptions. The instruments were largely of steel. Alcohol seems to have been used as a narcotic during operations, and bleeding was stopped by hot oils and tar.

In two types of operations especially, the Hindus were outstanding. Stone in the bladder (vesical calculus) was common in ancient India, and the surgeons frequently removed the stones by lateral lithotomy. They also introduced plastic surgery. Amputation of the nose was one of the prescribed punishments for adultery, and repair was carried out by cutting from the patient's cheek or forehead a piece of tissue of the required size and shape and applying it to the stump of the nose. The results appear to have been tolerably satisfactory, and the modern operation is certainly derived indirectly from this ancient source. Hindu surgeons also operated on cataracts by couching, or displacing the lens to improve vision.

China

The Chinese system of medicine is of great antiquity and is independent of any recorded external influences. According to tradition, Huangdi (the "Yellow Emperor"), one of the legendary founders of Chinese civilization, wrote the canon of internal medicine called the *Huangdi neijing* (*Yellow Emperor's Inner Classic*) in the 3rd millennium BCE; there is some evidence that in its present form it dates from no earlier than the 3rd century BCE. Most of the Chinese medical literature is founded on the *Huangdi neijing*, and it is still regarded as a great authority. Other famous works are the *Mojing* (known in the West as the "Pulse Classic"), composed about 300 CE, and the *Yuzhuan yizong jinjian* ("Imperially Commissioned Golden Mirror of the Orthodox Lineage of Medicine," also known in English as the *Golden Mirror*), a compilation made in 1742 of medical writings of the Han dynasty (202 BCE–220 CE). European medicine began to obtain a footing in China early in the 19th century, but the native system is still widely practiced.

Basic to traditional Chinese medicine is the dualistic cosmic theory of *yinyang*. The yang, the male principle, is active and light and is represented by the heavens. The yin, the female principle, is passive and dark and is represented by the earth. The human body, like matter in general, is made up of five elements: wood, fire, earth, metal, and water. With these are associated other groups of five, such as the five planets, the five conditions of the atmosphere, the five colours, and the five tones. Health, character, and the success of all political and private ventures are determined by the preponderance, at the time, of the yin or the yang, and the great aim of ancient Chinese medicine is to control their proportions in the body.

The teachings of the religious sects forbade the mutilation of the dead human body; hence, traditional anatomy rests on no sure scientific foundation. One of the most important writers on anatomy, Wang Qingren, gained his knowledge from the inspection of dog-torn children who had died in a plague epidemic in 1798 CE. Traditional Chinese anatomy is based on the cosmic system, which postulates the presence of such hypothetical structures as the 12 channels and the three so-called burning spaces. The body contains five organs (heart, lungs, liver, spleen, and kidneys), which store up but do not eliminate, and five viscera (such as the stomach, intestines, gallbladder, and bladder), which eliminate but do not store up. Each organ is associated with one of the planets, colours, tones, smells, and tastes. There are 365 bones and 365 joints in the body.
According to the physiology of traditional Chinese medicine, the blood vessels contain blood and air, in proportions varying with those of the yin and the yang. These two cosmic principles circulate in the 12 channels and control the blood vessels and hence the pulse. The *Huangdi neijing* says that "the blood current flows continuously in a circle and never stops. It may be compared to a circle without beginning or end." On this insubstantial evidence it has been claimed that the Chinese anticipated Harvey's discovery of the circulation of the blood. Traditional Chinese pathology is also dependent on the theory of the yin and the yang; this led to an elaborate classification of diseases in which most of the types listed are without scientific foundation.

In diagnosis, detailed questions are asked about the history of the illness and about such things as the patient's taste, smell, and dreams. Conclusions are drawn from the quality of the voice, and note is made of the colour of the face and of the tongue. The most important part of the

investigation, however, is the examination of the pulse. Wang Shuhe, who wrote the "Pulse Classic," lived in the 3rd century BCE, and innumerable commentaries were written on his work. The pulse is examined in several places, at different times, and with varying degrees of pressure. The operation may take as long as three hours. It is often the only examination made, and it is used both for diagnosis and for prognosis. Not only are the diseased organs ascertained, but the time of death or recovery may be foretold.

The Chinese materia medica has always been extensive and consists of vegetable, animal (including human), and mineral remedies. There were famous herbals from ancient times, but all these, to the number of about 1,000, were embodied by Li Shijen in the compilation of *Bencao gangmu* (the "Great Pharmacopoeia") in the 16th century CE. This work, in 52 volumes, has been frequently revised and reprinted and is still authoritative. The use of drugs is mainly to restore the harmony of the yin and the yang and is also related to such matters as the five organs, the five planets, and the five colours. The art of prescribing is therefore complex.

Among the drugs taken over by Western medicine from the Chinese are rhubarb, iron (for anemia), castor oil, kaolin, aconite, camphor, and *Cannabis sativa* (Indian hemp). Chaulmoogra oil was used by the Chinese for leprosy from at least the 14th century, and about the 19th century it began to be used for this purpose by Western physicians. The herb mahuang (*Ephedra vulgaris*) has been used in China for at least 4,000 years, and the isolation of the alkaloid ephedrine from it has greatly improved the Western treatment of asthma and similar conditions.

The most famous and expensive of Chinese remedies is ginseng. Western analysis has shown that it has diuretic and other properties but is of doubtful value. Reserpine, the active principle of the Chinese plant *Rauwolfia*, has also been isolated and has been effectively used in the treatment of hypertension (high blood pressure) and some emotional and mental conditions.

Hydrotherapy is probably of Chinese origin, since cold baths were used for fevers as early as 180 BCE. The inoculation of smallpox matter, in order to produce a mild but immunizing attack of the disease, was practiced in China from ancient times and came to Europe about 1720. Another treatment is moxibustion, which consists in making a small, moistened cone (moxa) of powdered leaves of mugwort, or wormwood (*Artemisia* species), applying it to the skin, igniting it, and then crushing it into the blister so formed. Other substances are also used for the moxa. Dozens of these are sometimes applied at one sitting. The practice is often associated with acupuncture.

Acupuncture consists of the insertion into the skin and underlying tissues of a metal needle, either hot or cold. The theory is that the needle affects the distribution of the yin and the yang in the hypothetical channels and burning spaces of the body. The site of the insertion is chosen to affect a particular organ or organs. The practice of acupuncture dates from before 2500 BCE and is peculiarly Chinese. Little of practical importance has been added since that date, although there have been many well-known treatises on the subject.

A bronze model circa 860 CE shows the hundreds of specified points for the insertion of the needle; this was the forerunner of countless later models and diagrams. The needles used are 3 to

24 cm (about 1 to 9 inches) in length. They are often inserted with considerable force and after insertion may be agitated or screwed to the left or right. Acupuncture, often combined with moxibustion, is still widely used for many diseases, including fractures. Patients in the Western world have turned to acupuncturists for relief from pain and other symptoms. There is some speculation that the treatment may trigger the brain to release morphinelike substances called endorphins, which presumably reduce the feeling of pain and its concomitant emotions.

Japan

The most interesting features of Japanese medicine are the extent to which it was derivative and the rapidity with which, after a slow start, it became Westernized and scientific. In early times disease was regarded as sent by the gods or produced by the influence of evil spirits. Treatment and prevention were based largely on religious practices, such as prayers, incantations, and exorcism; at a later date drugs and bloodletting were also employed.

Beginning in 608 CE, when young Japanese physicians were sent to China for a long period of study, Chinese influence on Japanese medicine was paramount. In 982, Tamba Yasuyori completed the 30-volume *Ishinhō*, the oldest Japanese medical work still extant. This work discusses diseases and their treatment, classified mainly according to the affected organs or parts. It is based entirely on older Chinese medical works, with the concept of yin and yang underlying the theory of disease causation.

In 1570 a 15-volume medical work was published by Menase Dōsan, who also wrote at least five other works. In the most significant of these, the *Keitekishū* (1574; a manual of the practice of medicine), diseases—or sometimes merely symptoms—are classified and described in 51 groups; the work is unusual in that it includes a section on the diseases of old age. Another distinguished physician and teacher of the period, Nagata Tokuhun, whose important books were the *I-no-ben* (1585) and the *Baika mujinzo* (1611), held that the chief aim of the medical art was to support the natural force and, consequently, that it was useless to persist with stereotyped methods of treatment unless the physician had the cooperation of the patient.

European medicine was introduced into Japan in the 16th century by Jesuit missionaries and again in the 17th century by Dutch physicians. Translations of European books on anatomy and internal medicine were made in the 18th century, and in 1836 an influential Japanese work on physiology appeared. In 1857 a group of Dutch-trained Japanese physicians founded a medical school in Edo (later Tokyo) that is regarded as the beginning of the medical faculty of the Imperial University of Tokyo.

During the last third of the 18th century it became government policy to Westernize Japanese medicine, and great progress was made in the foundation of medical schools and the encouragement of research. Important medical breakthroughs by the Japanese followed, among them the discovery of the plague bacillus in 1894, the discovery of a dysentery bacillus in 1897, the isolation of adrenaline (epinephrine) in crystalline form in 1901, and the first experimental production of a tar-induced cancer in 1918.

The roots of Western medicine

Early Greece

The transition from magic to science was a gradual process that lasted for centuries, and there is little doubt that ancient Greece inherited much from Babylonia and Egypt and even from India and China. Modern readers of the Homeric tales the *Iliad* and the *Odyssey* may well be bewildered by the narrow distinction between gods and humans among the characters and between historical fact and poetic fancy in the story. Two characters, military surgeons Podaleirius and Machaon, are said to have been sons of Asclepius, the god of medicine. The divine Asclepius may have originated in a human Asclepius who lived about 1200 BCE and is said to have performed many miracles of healing.

Asclepius was worshipped in hundreds of temples throughout Greece, the remains of which may still be seen at Epidaurus, Cos, Athens, and elsewhere. To these resorts, or hospitals, sick persons went for the healing ritual known as incubation, or temple sleep. They lay down to sleep in the dormitory, or *abaton*, and were visited in their dreams by Asclepius or by one of his priests, who gave advice. In the morning the patient often is said to have departed cured. There are at Epidaurus many inscriptions recording cures, though there is no mention of failures or deaths.

Diet, baths, and exercises played their part in the treatment, and it would appear that these temples were the prototype of modern health resorts. Situated in a peaceful spot, with gardens and fountains, each had its theatre for amusements and its stadium for athletic contests. The cult of incubation continued far into the Christian era. In Greece, some of the Aegean islands, Sardinia, and Sicily, sick persons are still taken to spend a night in certain churches in the hope of a cure.

It was, however, the work of the early philosophers, rather than that of the priests of Asclepius, that impelled Greeks to refuse to be guided solely by supernatural influence and moved them to seek out for themselves the causes and reasons for the strange ways of nature. The 6th-century philosopher Pythagoras, whose chief discovery was the importance of numbers, also investigated the physics of sound, and his views influenced the medical thought of his time. In the 5th century BCE Empedocles set forth the view that the universe is composed of four elements—fire, air, earth, and water—and this conception led to the doctrine of the four bodily humours: blood; phlegm; choler, or yellow bile; and melancholy, or black bile. The maintenance of health was held to depend upon the harmony of the four humours.

Reference

Britannica 2022. History of Medicine. https://www.britannica.com/science/history-of-medicine. Retrieved April 9, 2022.

THE ULTIMATE LIST OF MEDICAL SPECIALTIES

1. ALLERGY & IMMUNOLOGY
Specialists in allergy and immunology work with both adult and pediatric patients suffering from allergies and diseases of the respiratory tract or immune system. They may help patients suffering from common diseases such as asthma, food and drug allergies, immune deficiencies, and diseases of the lung. Specialists in allergy and immunology can pursue opportunities in research, education, or clinical practice.

2. ANESTHESIOLOGY
Anesthesiology is the branch of medicine dedicated to pain relief for patients before, during, and after surgery. The American Board of Anesthesiology outlines the following subspecialties within the field in the following areas of care:

- Critical care medicine
- Hospice and palliative care
- Pain medicine
- Pediatric anesthesiology
- Sleep medicine

3. DERMATOLOGY
Dermatologists are physicians who treat adult and pediatric patients with disorders of the skin, hair, nails, and adjacent mucous membranes. They diagnose everything from skin cancer, tumors, inflammatory diseases of the skin, and infectious diseases. They also perform skin biopsies and dermatological surgical procedures.

Subspecialties within the dermatology field include the following:

- Dermatopathology
- Pediatric dermatology
- Procedural dermatology

4. DIAGNOSTIC RADIOLOGY
Physicians specializing in diagnostic radiology are trained to diagnose illnesses in patients through the use of x-rays, radioactive substances, sound waves in ultrasounds, or the body's natural magnetism in magnetic resonance images (MRIs).

They can also pursue a subspecialty in the following areas:

- Abdominal radiology
- Breast imaging
- Cardiothoracic radiology
- Cardiovascular radiology
- Chest radiology
- Emergency radiology
- Endovascular surgical neuroradiology

• Gastrointestinal radiology
• Genitourinary radiology
• Head and neck radiology
• Interventional radiology
• Musculoskeletal radiology
• Neuroradiology
• Nuclear radiology
• Pediatric radiology
• Radiation oncology
• Vascular and interventional radiology

5. EMERGENCY MEDICINE
Physicians specializing in emergency medicine provide care for adult and pediatric patients in emergency situations. These specialists provide immediate decision making and action to save lives and prevent further injury. They help patients in the pre-hospital setting by directing emergency medical technicians and assisting patients once they arrive in the emergency department.

Emergency medicine is also home to several subspecialties, including the following:

• Anesthesiology critical care medicine
• Emergency medical services
• Hospice and palliative medicine
• Internal medicine / Critical care medicine
• Medical toxicology
• Pain medicine
• Pediatric emergency medicine
• Sports medicine
• Undersea and hyperbaric medicine

6. FAMILY MEDICINE
While many medical specialties focus on a certain function of the body or particular organ, family medicine focuses on integrated care and treating the patient as a whole. Physicians who specialize in family medicine treat patients of all ages. They are extensively trained to provide comprehensive health care and treat most ailments.

There are family medicine subspecialties as well, including the following:

• Adolescent medicine
• Geriatric medicine
• Hospice and palliative medicine
• Pain medicine
• Sleep medicine
• Sports medicine

7. INTERNAL MEDICINE

An internist is a physician who treats diseases of the heart, blood, kidneys, joints, digestive, respiratory, and vascular systems of adolescent, adult, and elderly patients. These physicians provide long-term and comprehensive care in hospitals and offices. Because they undergo primary care training on internal medicine, these physicians also address disease prevention, wellness, substance abuse, and mental health.

Internal medicine subspecialties including the following:

- Advanced heart failure and transplant cardiology
- Cardiovascular disease
- Clinical cardiac electrophysiology
- Critical care medicine
- Endocrinology, diabetes, and metabolism
- Gastroenterology
- Geriatric medicine
- Hematology
- Hematology and oncology
- Infectious disease
- Internal medicine
- Interventional cardiology
- Nephrology
- Oncology
- Pediatric internal medicine
- Pulmonary disease
- Pulmonary disease and critical care medicine
- Rheumatology
- Sleep medicine
- Sports medicine
- Transplant hepatology

8. MEDICAL GENETICS

A medical geneticist is a physician who treats hereditary disorders and diagnoses diseases that are caused by genetic defects. Medical geneticists may provide patients with therapeutic interventions and specialized counseling. They also educate patients and their families on their diagnoses and how to cope with their genetic disorder. Medical geneticists conduct cytogenetic, radiologic, and biochemical testing and scientific research in the field.

Medical geneticists house several subspecialties within the field, including the following:

- Biochemical genetics
- Clinical cytogenetics
- Clinical genetics
- Molecular genetic pathology

9. NEUROLOGY
Neurology is the specialty within the medical field pertaining to nerves and the nervous system. Neurologists diagnose and treat diseases of the brain, spinal cord, peripheral nerves, muscles, autonomic nervous system, and blood vessels. Much of neurology is consultative, as neurologists treat patients suffering from strokes, Alzheimer's disease, seizure disorders, and spinal cord disorders.

Neurology offers several subspecialties, including the following:

- Brain injury medicine
- Child neurology
- Clinical neurophysiology
- Endovascular surgical neuroradiology
- Hospice and palliative medicine
- Neurodevelopmental disabilities
- Neuromuscular medicine
- Pain medicine
- Sleep medicine
- Vascular neurology

10. NUCLEAR MEDICINE
Physicians who practice nuclear medicine are called nuclear radiologists or nuclear medicine radiologists. They use radioactive materials to diagnose and treat diseases. Utilizing techniques such as scintigraphy, these physicians analyze images of the body's organs to visualize certain diseases. They may also use radiopharmaceuticals to treat hyperthyroidism, thyroid cancer, tumors, and bone cancer.

11. OBSTETRICS AND GYNECOLOGY
Obstetrician/gynecologists (OB/GYNs) care for the female reproductive system and associated disorders. This field of medicine encompasses a wide array of care, including the care of pregnant women, gynecologic care, oncology, surgery, and primary health care for women.

Several subspecialties within obstetrics and gynecology include the following:

- Female pelvic medicine and reconstructive surgery
- Gynecologic oncology
- Maternal-fetal medicine
- Reproductive endocrinologists and infertility

12. OPHTHALMOLOGY
Physicians specializing in ophthalmology develop comprehensive medical and surgical care of the eyes. Ophthalmologists diagnose and treat vision problems. They may treat strabismus, diabetic retinopathy, or perform surgeries on cataracts or corneal transplantation.

There are several subspecialties within the ophthalmology field, including the following:

• Anterior segment/cornea ophthalmology
• Glaucoma ophthalmology
• Neuro-ophthalmology
• Ocular oncology
• Oculoplastics/orbit
• Ophthalmic Plastic & Reconstructive Surgery
• Retina/uveitis
• Strabismus/pediatric ophthalmology

13. PATHOLOGY
A physician specializing in pathology studies the causes and nature of diseases. Through microscopic examination and clinical lab tests, pathologists work to diagnose, monitor, and treat diseases. They examine tissues, cells, and body fluids, applying biological, chemical, and physical sciences within the laboratory. They may examine tissues to determine whether an organ transplant is needed, or they may examine the blood of a pregnant woman to ensure the health of the fetus.

Pathology umbrellas several areas of subspecialty within the field, including the following:

• Anatomical pathology
• Blood banking and transfusion medicine
• Chemical pathology
• Clinical pathology
• Cytopathology
• Forensic pathology
• Genetic pathology
• Hematology
• Immunopathology
• Medical microbiology
• Molecular pathology
• Neuropathology
• Pediatric pathology

14. PEDIATRICS
Physicians specializing in pediatrics work to diagnose and treat patients from infancy through adolescence. Pediatricians practice preventative medicine and also diagnose common childhood diseases, such as asthma, allergies, and croup.

They may work as a primary care pediatrician treating an array of ailments, or narrowing their scope of practice in one of the following subspecialties:

• Adolescent medicine
• Child abuse pediatrics
• Developmental-behavioral pediatrics
• Neonatal-perinatal medicine
• Pediatric cardiology

• Pediatric critical care medicine
• Pediatric endocrinology
• Pediatric gastroenterology
• Pediatric hematology-oncology
• Pediatric infectious diseases
• Pediatric nephrology
• Pediatric pulmonology
• Pediatric rheumatology
• Pediatric sports medicine
• Pediatric transplant hepatology

15. PHYSICAL MEDICINE & REHABILITATION

Physicians specializing in physical medicine and rehabilitation work to help patients with disabilities of the brain, spinal cord, nerves, bones, joints, ligaments, muscles, and tendons. Physiatrists work with patients of all ages and design care plans for conditions, such as spinal cord or brain injury, stroke, multiple sclerosis, and musculoskeletal and pediatric rehabilitation. Unlike many other medical specialties, physiatrists work to improve patient quality of life, rather than seek medical cures.

Subspecialties in this field include the following:

• Brain injury medicine
• Hospice and palliative medicine
• Neuromuscular medicine
• Pain medicine
• Pediatric rehabilitation medicine
• Spinal cord injury medicine
• Sports medicine

16. PREVENTIVE MEDICINE

Physicians specializing in preventative medicine work to prevent disease by promoting patient health and well-being. Their expertise goes far beyond preventative practices in clinical medicine, covering elements of biostatistics, epidemiology, environmental and occupational medicine, and even the evaluation and management of health services and healthcare organizations. The field combines interdisciplinary elements of medical, social, economic, and behavioral sciences to understand the causes of disease and injury in population groups.

Subspecialties within preventative medicine include the following:

• Aerospace medicine
• Medical toxicology
• Occupational medicine
• Public health medicine

17. PSYCHIATRY
Physicians specializing in psychiatry devote their careers to mental health and its associated mental and physical ramifications. Understanding the connections between genetics, emotion, and mental illness, is important while psychiatrists also conduct medical laboratory and psychological tests to diagnose and treat patients.

Subspecialties within psychiatry include the following:

- Addiction psychiatry
- Administrative psychiatry
- Child and adolescent psychiatry
- Community psychiatry
- Consultation/liaison psychiatry
- Emergency psychiatry
- Forensic psychiatry
- Geriatric psychiatry
- Mental retardation psychiatry
- Military psychiatry
- Pain medicine
- Psychiatric research
- Psychosomatic medicine

18. RADIATION ONCOLOGY
Physicians specializing in radiation oncology treat cancer with the use of high-energy radiation therapy. By targeting radiation doses in small areas of the body, radiation oncologists damage the DNA of cancer cells, preventing further growth. Radiation oncologists work with cancer patients, prescribing and implementing treatment plans while monitoring their progress throughout.

Radiation oncology houses a few subspecialties, including the following:

- Hospice and palliative medicine
- Pain medicine

19. SURGERY
Physicians specializing in surgery can choose to become general surgeons or pursue a subspecialty in a specific area of the body, type of patient, or type of surgery. General surgeons provide a wide variety of life-saving surgeries, such as appendectomies and splenectomies. They receive broad training on human anatomy, physiology, intensive care, and wound healing.

The Association of American Medical Colleges and American College of Surgeons outline a number of surgical subspecialties and areas of practice, including the following:

- Colon and rectal surgery
- General surgery

o Surgical critical care
• Gynecologic oncology
• Plastic surgery
o Craniofacial surgery
o Hand surgery
• Neurological surgery
o Endovascular surgical neuroradiology
• Ophthalmic surgery
• Oral and maxillofacial surgery
• Orthopaedic surgery
o Adult reconstructive orthopaedics
o Foot and ankle orthopaedics
o Musculoskeletal oncology
o Orthopaedic sports medicine
o Orthopaedic surgery of the spine
o Orthopaedic trauma
o Pediatric orthopaedics
• Otolaryngology
o Pediatric otolaryngology
• Otology neurotology
• Pediatric surgery
o Neonatal
o Prenatal
o Trauma
o Pediatric oncology
• Surgical Intensivists, specializing in critical care patients
• Thoracic Surgery
o Congenital cardiac surgery
o Thoracic surgery-integrated
• Vascular surgery

20. UROLOGY

Urology is the health care segment that cares for the male and female urinary tract, including kidneys, ureters, bladder, and urethra. It also deals with the male sex organs. Urologists have knowledge of surgery, internal medicine, pediatrics, gynecology, and more.

Within urology, there are several areas of subspecialty, including the following:

• Pediatric urology
• Urologic oncology
• Renal transplant
• Male infertility
• Calculi
• Female urology
• Neurourology

Reference

St. George's University, Grenada, West Indies. 2020 (April 25). THE ULTIMATE LIST OF MEDICAL SPECIALTIES. https://www.sgu.edu/blog/medical/ultimate-list-of-medical-specialties/. Retrieved April 9, 2022.

Common Illnesses

- Allergies
- Colds and Flu
- Conjunctivitis ("pink eye“)
- Diarrhea
- Headaches
- Mononucleosis
- Stomach Aches

Allergies

Allergies are an immune response triggered by allergens, an ordinarily harmful substance.

Causes

People with allergies have especially sensitive immune systems that react when they contact allergens.

Common allergens include:

- foods (nuts, eggs, milk, soy, shellfish, wheat)
- pollen
- mold
- latex
- pet dander

Symptoms

Because there are so many possible causes, the symptoms of allergies vary widely. Airborne allergens, like pollen and pet dander, are likely to cause:

- Eye irritation
- Runny nose
- Stuffy nose
- Puffy, watery eyes
- Sneezing
- Inflamed, itchy nose and throat

Allergens that are consumed, like foods or certain medications, can cause:

- Hives or skin rashes
- Gastrointestinal distress (diarrhea, nausea, vomiting, excessing gas, indigestion)
- Tingling or swelling of the lips, face, or tongue
- Itchiness

- Difficulty breathing or wheezing
- Fainting/ or lightheadedness

In cases of a more extreme response, called anaphylaxis, symptoms are severe and life-threatening.

Treatment

The easiest and most effective way to treat allergies is to get rid of or avoid the cause. Where unavoidable, some lifestyle changes can reduce your allergy symptoms. For example, if you are allergic to dust mites, make an effort to keep your room clean and free of dust by frequent vacuuming, dusting, and washing of bedding.

For pollen allergies, avoid being outside when pollen counts are high and keep the windows to your room shut.

Because it is very difficult to avoid certain allergens, medication may be necessary to lessen symptoms caused by allergens, other than food and drugs.

- **Antihistamines**: help relieve or prevent the sneezing, itchy eyes and throat, and postnasal drip that the allergen may cause. They are sold in many forms (i.e., pills, nasal sprays, liquids, etc.).
- **Decongestants:** help reduce congestion in your nasal membranes by narrowing the blood vessels that supply those membranes. They can be purchased in several forms (liquid, pill or nasal spray) and may be used with an antihistamine or alone to treat nasal swelling related to allergies. Limit use of nasal sprays to fewer than two to three days in a row because prolonged use can cause the nasal membrane swells, resulting in severe nasal obstruction.
- **Anti-inflammatory agents (e.g., corticosteroid):** help reduce swelling of the airways, nasal congestion and sneezing. Typically taken as a nasal spray. Some people report that corticosteroids irritate nasal passages.
- **Allergy shots:** recommended for serious allergy sufferers, this series of shots are administered by a healthcare provider and contain small amounts of the allergens that cause you discomfort. The goal of allergy shots is to enable your immune system to build better defenses against allergens.

Some allergies go away with age, but others are lifelong.

Prevention

- Avoid the outdoors between 5-10 a.m. and save outside activities for late afternoon or after a heavy rain, when pollen levels are lower.
- Keep windows in your living spaces closed to lower exposure to pollen.
- To keep cool, use air conditioners and avoid using window and attic fans.

- Wear a medical alert bracelet or other means to communicate to others about your allergy in case of a reaction.
- Discuss a prescription for epinephrine (e.g., EpiPen) with your healthcare provider, if you have risk of serious allergic reaction.
- Review product labels carefully before buying or consuming any item
- Know what you are eating or drinking.

Cold and Flu

Colds and influenza (flu) are the most common illnesses among college students.

Causes

Both of these illnesses are upper respiratory infections, meaning they involve your nose, throat, and lungs. Viruses cause both colds and flu by increasing inflammation of the membranes in the nose and throat.

Most transmission of these viruses occurs via hand-to-hand contact.

Symptoms

Flu symptoms come on suddenly and affect the body all over. Flu symptoms are usually more serious than a cold and include:

- fever (100° F),
- headache,
- more intense pain and fatigue, and
- more severe, often dry cough.

When you get the flu, you are also more prone to bronchitis, sinus, and ear infections.

Cold symptoms mostly affect above the neck and include:

- a runny or stuffy nose (nasal congestion),
- sneezing,
- sore throat, and
- cough.

You may also experience a mild headache, body aches or a low grade fever. Typically, a cold lasts 2-14 days.

Treatment

If any problem is causing you discomfort, you should seek medical care.

Seek medical attention promptly if you have:

- a fever of 102° F or greater (which may indicate a more serious infection),
- a persisting cough, especially with a significant fever (which could indicate pneumonia),
- a persistent sore throat (especially if runny nose does not develop - which could indicate a strep infection), or
- any cold lasting more than 10 days.

Because colds and flu are caused by viruses, they cannot be cured by antibiotics. There are tips to help you feel better and strengthen your immune system to fight illness:

- Rest more than usual and avoid exercise until symptoms are gone.
- Drink lots of clear fluids (e.g., water, tea).
- Stay away from cigarette smoke.
- Do not take antibiotics unless specifically prescribed for you to cure the illness from which you currently suffer.
- Avoid drinking alcohol because it weakens your immune system and may interact with medications.
- Avoid caffeine, which can increase congestion and dehydration.
- Eat a well-balanced diet, including fruits, vegetables, and grains.

More Specific Remedies for Comfort

Runny Nose/Congestion:

- Decongestants (e.g. pseudoephedrine) can relieve a runny nose and congestion, but these medications can inhibit sleep and suppress appetite.
- Salt water nasal sprays (e.g. NaSal or Ocean) can ease nasal congestion and thin mucus. However, excessive use of medicated nose sprays, like Afrin, can cause dependence and may make congestion worse.
- Humidifiers and hot showers can help to moisten nasal passages and clear mucus.

Cough:

- Dextromethorphan is an effective cough suppressant, but because a cough is a protective reflex, it is not usually a bad thing. Take dextromethorphan if your cough is interfering with sleep or work.
- Water vapor from humidifiers and showers can help loosen the mucus causing a cough, as can chicken soup.

Sore Throat:

- Phenol in lozenges and sprays is an effective pain reliever for sore throats.
- Gargling with warm saltwater (1 tsp. salt in one cup of warm water) every four hours may help ease pain by reducing swollen tonsils.
- Drinking tea with lemon (with or without honey).

Fever/Pain:

- Acetaminophen, Aspirin, Ibuprofen. If symptoms are severe, you may alternate acetaminophen and ibuprofen every two hours for pain or fever relief.

Prevention

UHS offers flu shots to Princeton students at a reduced cost every fall. Even though getting a flu shot will not completely eliminate your chances of developing the flu, it will certainly reduce the risk. Each year, a new vaccine made from inactivated (killed) influenza viruses is formulated. Since it may take the immune system time to respond to the vaccination, the inactivated vaccine should be given 6 to 8 weeks before flu season begins in order to prevent infection or reduce the severity of the illness.

The flu is probably only contagious during the first three days of illness, and the incubation period is 24-72 hours, meaning you might not show symptoms for three days after contracting the virus. It is rare to catch a cold virus through the air – most transmission occurs via hand-to-hand contact. To prevent colds, flu, and other illnesses, follow these tips:

- Wash your hands often (which is good advice for keeping healthy in any situation). Keep them away from your nose, eyes, and mouth. Use an instant hand sanitizer when you can't wash your hands.
- Get regular exercise and eat well.
- Follow good sleep habits.
- Get a flu shot each fall (offered to all students at a lower cost by UHS each fall)

Conjunctivitis ("pink eye")

Causes

Conjunctivitis, an inflammation of the transparent membrane (conjunctiva) that lines your eyelids and part of your eyeballs, has several possible causes. It could be a bacterial or viral infection, an allergic reaction to pollen or animal dander, or a result of chemical irritants (smoke, chlorine, lens solution, etc.).

Symptoms

These symptoms may last a few hours to several weeks: redness, itching, tearing, burning sensation, pus-like discharge and/or crusting of the eyelids. Because conjunctivitis causes inflammation of the small blood vessels in the conjunctiva to become more prominent, the whites of your eyes will appear pink or red. When you wake you are likely to feel that your eyelids are pasted shut, and your vision may not be as clear as usual.

Treatment

Because pink eye is highly contagious, early diagnosis is important. Bacterial cases can be cured with antibiotic eye drops, viral conjunctivitis clears up on its own, and allergic reactions can be treated with various types of eye drops. Here are some general tips:

- Wash your hands frequently to prevent spreading an existing infection to your other eye, and to other people.
- Don't rub your eyes.
- Use a cool wet washcloth to soak off any crusting.
- Use a warm or cool compress to reduce discomfort.
- Discard eye make-up because it may cause future infection.
- Wash any clothing that may be contaminated, including towels and pillowcases. Try to use clean towels and pillowcases everyday.
- Avoid wearing contact lenses and discard current lenses.
- If eye drops are prescribed, place drop in pocket formed by pulling down lower lid. Make sure you don't touch the bottle to the eye in order to prevent contamination.
- If the infection does not improve in 2 or 3 days, make an appointment for re-evaluation.

Prevention

Pink eye is extremely contagious, so if you know someone who is infected, make sure you do not expose yourself to contact with the person's eye fluid. The infection can easily be passed via keyboards, doorknobs, make-up, pens, gym equipment, and a vast number of other items. To protect yourself, wash your hands frequently, avoid touching your eyes, and wash anything that may be contaminated.

Diarrhea

Causes

- Bacterial infection, caused by contaminated food or water
- Viral infection
- Parasites, which can enter the body through food or water
- Food intolerance, such as the inability to digest lactose, the sugar in milk
- Overuse of alcohol or laxatives
- Medication, such as some antibiotics or antacids containing magnesium
- Menstrual cramps
- Stress or a panic attack

Symptoms

- watery, loose stools
- frequent bowel movements
- cramping or pain in the abdomen, nausea, bloating
- possibly fever or bloody stools, depending on the cause

Treatment

Usually diarrhea will clear up on its own in a day or two, but a prolonged case may cause complications. The most important concern is dehydration. If you have symptoms of dehydration, a fever above 102° F, bloody stools (black and tarry), severe abdomen or rectum pain, or diarrhea lasting more than 3 days you should consult a physician. Here's some advice for taking care of diarrhea yourself:

- Avoid foods that are milk-based, greasy, high-fiber, or very sweet because these are likely to aggravate diarrhea.
- Avoid caffeine and alcohol.
- Do not eat solid food if you have signs of dehydration (thirst, light-headed, dark urine). Instead, drink about 2 cups of clear fluids per hour (if vomiting isn't present), such as sports drinks and broth. Water alone is not enough because your body needs sodium and sugar to replace what it's losing.
- Avoid high sugar drinks, like apple juice, grape juice, and soda, which can pull water into the intestine and make the diarrhea persist.
- Don't drink clear liquids exclusively for more than 24 hours.
- Begin eating normal meals within 12 hours, but stick to food that is bland and won't irritate your intestine. Some doctors suggest the "BRAT" diet which includes foods that are low in fiber, fat, and sugar. BRAT stands for Bananas, Rice, Applesauce, and Toast.
- Use over-the-counter lactobacillus acidophilus capsules or tablets. These bacteria help maintain a healthy intestine, and are found in yogurt with live active cultures.
- Decrease level of exercise until symptoms are gone.
- Over-the-counter drugs, such as Imodium A-D, should only be used if absolutely necessary because it is important to let diarrhea flush out the bacteria or parasite that's causing the infection.

Headaches

Everyone suffers the occasional mild headache, but if you experience debilitating pain and/or abnormally frequent headaches, you probably want to find relief. There are countless causes of headaches, which differ for each person, so you'll have to do some experimenting to figure out the cause of your pain. Fortunately, the vast majority of headaches are primary headaches, not the result of underlying medical conditions. The three most common types are cluster, tension-type, and migraine.

A cluster headache affects a specific point of the head, often the eye, and is characterized by sharp, piercing pain. Migraine and tension-type headaches are far more common. "Tension" headaches are now called "tension-type" headaches because pain is not only caused by stress, but also poor posture, depression, and even sexual activity. In fact, recent studies have shown a connection between low serotonin levels and so-called "tension" headaches.

Causes

The cause of a headache is often elusive. Although it may seem that your head is pounding for no reason, there is always an explanation for pain. To find out the cause of your headaches, keep a log. Write down the date and time each headache starts and stops, the location of the pain, the nature and severity of the pain, and any factors that seem to trigger the headaches (food, stress, menstrual cycle, medicine, etc.).

Some of the many causes of headaches:

- Emotional and physical stress
- Fatigue
- Irregular sleep habits (sleeping too much or too little)
- Skipping meals
- Caffeine use or withdrawal
- Hormonal factors, such as menstruation
- Monosodium glutamate (MSG)
- Foods with nitrates, such as hot dogs
- Alcohol
- Some medicines
- Certain foods, including red wine, chocolate, aged cheeses, pickled foods, nuts, and aspartame
- Changes in weather, altitude, or time zone

Symptoms

Just as the causes vary for each headache sufferer, so do the symptoms and severity of pain. Health professionals can often diagnose the type of headache you suffer based on your symptoms.

Symptoms of a migraine:

- pulsing or throbbing quality
- begins with intense pain on one side of the head, which eventually spreads
- felt on one or both sides of the head
- lasts several hours
- severe enough to interfere with routine activities
- may be accompanied by nausea or vomiting
- sometimes preceded by visual changes, such as an aura of zigzag lines or flashes of light
- light and noise can make the headache worse, while sleep tends to relieve symptoms

Symptoms of a tension-type headache:

- constant, dull ache
- felt on both sides of the head
- a feeling of squeezing or pressure

- does not usually interfere with routine activities
- lasts from 30 minutes to a few days

Treatment

- Ice pack held over the eyes or forehead
- Heating pad set on low or hot shower to relax tense neck and shoulder muscles
- Sleep, or at least resting in a dark room
- Taking breaks from stressful situations
- Regular exercise to increase endorphin levels and relax muscles. Even if you already have a headache, exercising may relieve the pain. However, intense exercise may bring on a headache.
- Occasional use of over-the-counter medicines such as acetaminophen, ibuprofen, or aspirin can relieve both migraine and tension headaches. *
- Prescription drugs for severe headaches

* Overuse of pain medicine can actually result in more frequent headaches. Most pain-relieving medicines used to treat headaches can cause "analgesic rebound headaches" if used too often.

Prevention

- Be aware of early symptoms so you can try to stop the headache as soon as it begins.
- Don't smoke, and if you do, quit.
- Don't skip meals.
- Cut down on caffeine and alcohol (reduce caffeine intake gradually because withdrawal may cause headaches).
- Stop all over-the-counter medicines and herbal remedies.
- Maintain a regular eating and sleeping schedule.
- Exercise regularly.
- Incorporate relaxation activities into your daily routine, such as meditation, yoga, stretching exercises, and massage
- Improve your posture, possibly by adjusting your workstation.

When should I see a health care provider?

Although most headaches do not signal underlying medical problems, if your headaches change in nature or location, or become more severe, frequent, and/or intense, you should consult your health care provider.

Seek immediate medical attention if your headaches…

- Become increasingly worse, and are most painful early in the morning while you are still in bed.
- Occur three or more times a week.

- Begin to be accompanied by nausea or vomiting.
- Occur after a head injury, especially if they get worse.
- Seem to be triggered by physical exertion, such as exercise, sexual activity, or coughing.
- Occur along with green or brown nasal drainage and sinus pain over the cheeks or around the eyes.
- Are accompanied by dizziness, difficulty speaking, vision loss, or numbness in an arm, leg, or parts of the face.
- Develop suddenly, accompanied by a fever over 101°F and are not relieved by acetaminophen or aspirin, especially if there is pain or stiffness in the neck.

Mononucleosis

Cause

Mononucleosis is an illness caused by the Epstein-Barr virus (EBV), which is spread through saliva.

Symptoms

The most well known symptom of "mono" is extreme fatigue, forcing the infected person to nap frequently. If you experience such extreme fatigue accompanied by other symptoms, such as swollen lymph glands and spleen, sore throat, fever, loss of appetite, and muscle aches, you may want to get tested for mono. The basis for testing whether you have mono is the presence of antibodies produced by white blood cells. Many people infected with mono don't get sick, or have such mild symptoms they don't know they have it. EBV is usually in the body 30-50 days before an infected person develops symptoms. Surprisingly, 80-95% of adults in the US have been infected by the time they're 40, but only about 20% know they've had mono.

Treatment

Mono is a virus, so antibiotics won't help. Make sure you get plenty of rest, eat healthy foods, avoid alcohol (because your liver may be inflamed and drinking weakens immune responses), drink plenty of fluids, take aspirin or an aspirin substitute to reduce pain and fever, gargle salt water to relieve sore throat, and avoid strenuous activity. Because your spleen may be swollen, it is important not to engage in contact sports which could rupture your spleen. Returning to normal activity too quickly increases your chances of relapse.

Prevention

Avoiding someone with mono can be hard because infected individuals often do not show symptoms. Because the incubation period is so long, a person can be contagious 1-2 months before showing any symptoms, and some people don't show symptoms at all. Even after signs of mono have disappeared, a person may still be producing the virus. A strong immune system, maintained by healthy diet, exercise, and adequate sleep, can help you from getting ill. Fortunately, mono is not very contagious, and is usually only passed through intimate contact, such as kissing. [top]

Stomach Aches

Intestinal Gas

It's natural to have gas in your digestive tract, and to pass gas regularly. In fact, everyone passes gas at least 12 times a day, which is a combination of oxygen, hydrogen, nitrogen, carbon dioxide, and methane. The unpleasant odor of flatus is cause by gases (e.g. hydrogen sulfide) produced by the bacteria in the large intestine. Even though it's natural to have gas in your digestive tract, excessive gas can cause intense, temporary pain. People who suffer discomfort from gas in the intestine report abdominal bloating, flatulence, and jabbing pains or cramps in the abdomen. Intestinal gas can mimic the pain associated with real illnesses, like gallbladder disease, heart disease, and appendicitis, but be aware that it can also signal other illnesses, such as stomach flu or food poisoning.

The best treatment for gas focuses on the cause. Although there are several over-the-counter medications that advertise gas relief, they do not work for everyone and may have side effects. Medications that have been shown to effectively reduce gas use simethicone, a substance that helps gas be expelled through belching or passing flatus (it does not make gas dissolve or disappear). Activated charcoal preparations may also be helpful. While these medications are good for short-term immediate relief, the best step for long-term comfort is to find out what causes you gas.

There are two general causes of gas: swallowed air and the breakdown of undigested foods by harmless bacteria in the large intestine. Everyone swallows air when they eat and drink, but these activities are likely to increase the amount ingested:

- Eating or drinking rapidly
- Drinking through a straw
- Chewing gum or eating hard candy
- Smoking

Food triggers vary from person to person, but the types of food that seem to cause the most problems are those that are high in fiber or lactose. Foods that may cause gas include:

- Beans
- Peas
- Lentils
- Cabbage
- Broccoli
- Brussels sprouts
- Milk products (if you lack adequate amounts of the enzyme lactase)
- Onions
- Wheat
- Carbonated beverages
- Sorbitol (artificial sweetener) and fructose (found in corn syrup)

To prevent gas:

- Avoid foods that trigger gas.
- Avoid swallowing excess air by not chewing gum or eating hard candy.
- Take digestive enzyme supplements, such as Beano (for high-fiber foods) and lactase supplements (for milk products).
- Eat only small amounts of dairy products with food, if you suspect lactose intolerance.
- Eat several small meals throughout the day instead of two or three larger ones.
- Eat slowly, in a relaxed setting, and chew your food thoroughly.
- Take a stroll after meals. Don't sit in a slumped position or lie down after eating.
- If increasing the fiber in your diet, do so gradually
- Exercise to facilitate the passage of gas through the digestive tract.

Nausea and Vomiting

Possible causes for nausea and/or vomiting:

- Viruses in the intestines (viral gastroenteritis, see below)
- Some medications, such as certain antibiotics and birth control pills
- Eating too much or eating spoiled food
- Drinking too much (e.g. alcohol)
- Motion sickness
- Morning sickness in pregnant females

Medical conditions that cause vomiting:

- Labrynthitis – inflammation of an area in the ear that usually results from an upper respiratory infection
- Concussion from a head injury
- Stomach ulcers
- Hepatitis (inflammation of the liver)
- Meningitis (inflammation of the membranes that cover the brain and spinal cord)

Gastroenteritis, a.k.a. "stomach flu," is an inflammation of the intestines that can be caused by viruses, parasites, bacteria, food allergies, overuse of alcohol, and psychological reactions. Viruses that cause gastroenteritis can enter the intestine from contaminated food or water, or through contact with an infected person. Many different viruses can infect the intestine, but the signs and symptoms of gastroenteritis are generally the same: abdominal cramps, watery diarrhea and nausea and/or vomiting. Symptoms of gastroenteritis can develop anywhere from a few hours to a few days after contamination. Most cases resolve within a couple days without specific treatment, but some may last for up to 10 days. In addition to avoiding food and water that might be contaminated, you should wash your hands thoroughly and frequently (especially because viruses often enter the body through the fecal-oral route, when people do not wash their hands thoroughly after bowel movements). Because stomach flu is contagious, avoid

sharing eating utensils, drinks, towels, and other objects that may transmit the virus from one person to another.

The biggest health risk posed by gastroenteritis is dehydration. If you exhibit signs of dehydration, including extreme thirst, dry mouth, dark urine, dizziness, and severe weakness, get medical help immediately. If you cannot replace lost fluids through sipping clear liquids, you may need intravenous fluids and hospitalization.

Self-care tips for vomiting:

- Wait 30-60 minutes after vomiting before drinking anything to let your stomach settle.
- Don't eat solid foods. Don't drink milk.
- Drink clear liquids, taking small sips. Stir any carbonated beverages to get all the bubbles out before sipping them. Suck on ice chips if nothing else will stay down.
- Gradually return to regular diet, but wait about 8 hours from the last time you vomited. Start with foods like dry toast, crackers, rice, and other foods that are easy to digest.
- Avoid substances that irritate the stomach, like alcohol, aspirin, and fried foods.
- Avoid diuretics, like caffeine and alcohol, that contribute to fluid loss.

For nausea without vomiting:

- Drink clear liquids. Eat small amounts of dry foods, such as soda crackers, if tolerated.
- Avoid things that irritate the stomach, such as alcohol, aspirin, spicy, and fried foods.
- For motion sickness, use an over-the-counter anti-nausea medicine, such as Dramamine.

When should I see a health care provider?

- If you can't keep liquids down for more than 24 hours
- If you have blood in vomit or stools
- If you're vomiting for more than 1 day
- If you have signs of dehydration (dry mouth, dark urine, dizziness, etc.)
- If you have a fever of more than 100° F
- If vomiting is accompanied by a sore neck and severe headache

Reference

Anonymous 2022. Common Illnesses. https://uhs.princeton.edu/health-resources/common-illnesses. Retrieved April 9, 2022.

Signs and Symptoms

Signs and symptoms are the observed or detectable signs, and experienced symptoms of an illness, injury, or condition. A sign for example may be a higher or lower temperature than normal, raised or lowered blood pressure or an abnormality showing on a medical scan. A symptom is something out of the ordinary that is experienced by an individual such as feeling feverish, a headache or other pain or pains in the body.

Symptoms by presentation

My ... hurts

- abdomen
- back
- chest
- ear
- head
- pelvis
- tooth
- rectum
- skin
- Extremities
  - leg
- Chronic pain

I feel:

- Chills
- Fever
- Paresthesia (numbness, tingling, electric tweaks)
- Light-headed
- Dizzy
  - Dizzy – about to black out
  - Dizzy – with the room spinning around me
- My mouth is dry
- Nauseated
- Sick
  - like I have the flu
  - like I have to vomit
- Short of breath
- Sleepy
- Sweaty
- Thirsty
- Tired
- Weak

I can't:

- Breathe normally
- Hear normally:
  - losing hearing
  - sounds are too loud
  - ringing or hissing in my ears
- Move one side – arm and/or leg
- Pass a bowel action normally
- Pass urine normally
- Remember normally
- See properly:
  - Blindness
  - blurred vision
  - double vision
- Sleep normally
- Smell things normally
- Speak normally
- Stop passing watery bowel actions
- Stop scratching
- Stop sweating
- Swallow normally
- Taste properly
- Walk normally
- Write normally

Medical signs and symptoms

Where available, ICD-10 codes are listed. When codes are available both as a sign/symptom (R code) and as an underlying condition, the code for the sign is used.

When there is no symptoms for a disease that a patient has, the patient is said to be asymptomatic.

- **General**
  - anorexia (R63.0)
    - weight loss (R63.4)
  - cachexia (R64)
  - chills and shivering
  - convulsions (R56)
  - deformity
  - discharge
  - dizziness / Vertigo (R42)
  - fatigue (R53)
    - malaise

        - asthenia
    - hypothermia (T68)
    - jaundice (P58, P59, R17)
    - muscle weakness (M62.8)
    - pyrexia (R50)
    - sweats
    - swelling
    - swollen or painful lymph node(s) (I88, L04, R59.1)
    - weight gain (R63.5)
- **Cardiovascular**
    - arrhythmia
    - bradycardia (R00.1)
    - chest pain (R07)
    - claudication
    - palpitations (R00.2)
    - tachycardia (R00.0)
- **Ear, Nose and Throat**
    - dry mouth (R68.2)
    - epistaxis (R04.0)
    - halitosis
    - hearing loss
    - nasal discharge
    - otalgia (H92.0)
    - otorrhea (H92.1)
    - sore throat
    - toothache
    - tinnitus (H93.1)
    - trismus
- **Gastrointestinal**
    - abdominal pain (R10)
    - bloating (R14)
    - belching (R14)
    - bleeding:
        - Hematemesis
        - blood in stool: melena (K92.1), hematochezia
    - constipation (K59.0)
    - diarrhea (A09, K58, K59.1)
    - dysphagia (R13)
    - dyspepsia (K30)
    - fecal incontinence
    - flatulence (R14)
    - heartburn
    - nausea (R11)

- odynophagia
- proctalgia fugax
- pyrosis (R12)
- Rectal tenesmus
- steatorrhea
- vomiting (R11)

- **Integumentary**
  - Hair:
    - alopecia
    - hirsutism
    - hypertrichosis
  - nail:
  - Skin:
    - abrasion
    - anasarca (R60.1)
    - bleeding into the skin
      - petechia
      - purpura
      - ecchymosis and bruising (Sx0 (x=0 through 9))
    - blister (T14.0)
    - edema (R60)
    - itching (L29)
    - Janeway lesions and Osler's node
    - laceration
    - rash (R21)
    - urticaria (L50)
- **Neurological**
  - abnormal posturing
  - acalculia
  - agnosia
  - alexia
  - amnesia
  - anomia
  - anosognosia
  - aphasia and apraxia
  - apraxia
  - ataxia
  - cataplexy (G47.4)
  - confusion
  - dysarthria
  - dysdiadochokinesia
  - dysgraphia
  - hallucination

- headache (R51)
- hypokinetic movement disorder:
  - akinesia
  - bradykinesia
- hyperkinetic movement disorder:
  - akathisia
  - athetosis
  - ballismus
  - blepharospasm
  - chorea
  - dystonia
  - fasciculation
  - muscle cramps (R25.2)
  - myoclonus
  - opsoclonus
  - tic
  - tremor
    - flapping tremor
- insomnia (F51.0, G47.0)
- Lhermitte's sign (as if an electrical sensation shoots down back & into arms)
- loss of consciousness
  - Syncope (medicine) (R55)
- neck stiffness
- opisthotonus
- paralysis and paresis
- paresthesia (R20.2)
- prosopagnosia
- somnolence (R40.0)

- **Obstetric / Gynaecological**
  - abnormal vaginal bleeding
    - vaginal bleeding in early pregnancy / miscarriage
    - vaginal bleeding in late pregnancy
  - amenorrhea
  - infertility
  - painful intercourse (N94.1)
  - pelvic pain
  - vaginal discharge
- **Ocular**
  - amaurosis fugax (G45.3) and amaurosis
  - blurred vision
  - Dalrymple's sign
  - double vision (H53.2)
  - exophthalmos (H05.2)

- mydriasis/miosis (H570)
- nystagmus

- **Psychiatric**
  - amusia
  - anhedonia
  - anxiety
  - apathy
  - confabulation
  - depression
  - delusion
  - euphoria
  - homicidal ideation
  - irritability
  - mania (F30)
  - paranoid ideation
  - phobia:
  - suicidal ideation
- **Pulmonary**
  - apnea and hypopnea
  - cough (R05)
  - dyspnea (R06.0)
    - bradypnea (R06.0) and tachypnea (R06.0)
    - orthopnea and platypnea
    - trepopnea
  - hemoptysis (R04.2)
  - pleuritic chest pain
  - sputum production (R09.3)
- **Rheumatologic**
  - arthralgia
  - back pain
  - sciatica
- **Urologic**
  - dysuria (R30.0)
  - hematospermia
  - hematuria (R31)
  - impotence (N48.4)
  - polyuria (R35)
  - retrograde ejaculation
  - strangury
  - urethral discharge
  - urinary frequency (R35)
  - urinary incontinence (R32)
  - urinary retention

References

Wikipedia 2022. Signs and Symptoms. https://en.wikipedia.org/wiki/Signs_and_symptoms.

Wikipedia 2022. List of medical symptoms.
https://en.wikipedia.org/wiki/List_of_medical_symptoms#Medical_signs_and_symptoms

Understanding Over-the-Counter Medicines

Over-the-counter medicine is also known as OTC or nonprescription medicine. All these terms refer to medicine that you can buy without a prescription. They are safe and effective when you follow the directions on the label and as directed by your health care professional.

The information in this section will help you, working with your health care professionals, to choose and use over-the-counter medicine wisely.

(FDA 2022)

Over-the-Counter Medicines

Also called: Non-prescription drugs, OTC medicines

In the United States, the Food and Drug Administration decides whether a medicine is safe and effective enough to sell over-the-counter. This allows you to take a more active role in your health care. But you also need to be careful to avoid mistakes. Make sure to follow the instructions on the drug label. If you don't understand the instructions, ask your pharmacist or health care provider.

Also keep in mind that that there are still risks to taking OTC medicines:

The medicine you are taking could interact with other medicines, supplements, foods, or drinks
Some medicines are not right for people with certain medical conditions. For example, people with high blood pressure should not take certain decongestants.
Some people are allergic to certain medicines
Many medicines are not safe during pregnancy. If you are pregnant, check with your health care provider before taking any medicine.
Be careful when giving medicines to children. Make sure that you give your child the correct dose. If you are giving your child a liquid medicine, don't use a kitchen spoon. Instead use a measuring spoon or a dosing cup marked in teaspoons.

If you have been taking an OTC medicine but your symptoms don't go away, contact your health care provider. You should not take OTC medicines longer or in higher doses than the label recommends.

(Anonymous 2022a)

Over-the-counter (OTC) drugs are those available without a prescription.

Safety is a major concern when the Food and Drug Administration (FDA) considers reclassifying a prescription drug as OTC (over-the-counter). Most OTC drugs—unlike health foods, dietary supplements (including medicinal herbs) and complementary therapies—have been studied scientifically and extensively. However, all drugs have benefits and risks, and some degree of risk has to be tolerated if people are to receive a drug's benefits. Defining an acceptable degree of risk is a judgment call.

Reclassifying drugs as over-the-counter drugs

The following questions can help determine whether a drug is safe enough to be made available over the counter:

- Has the drug been used for a long enough time so that any harmful effects are fully understood?
- What harmful effects (including those from misuse) may the drug cause?
- Is the drug habit forming?
- Do the benefits of over-the-counter status outweigh the risks?

Other questions help determine the ease with which a disease can be diagnosed and then treated outside of a health care setting:

- Can the average person self-diagnose the condition that calls for the drug?
- Can the average person treat the condition without the help of a doctor or other health care practitioner?

Finally, people need to understand how to use the drug, so labeling on the outside and inside of the package are important considerations:

- Can adequate directions for use be written?
- Can warnings against unsafe use be written?
- Can the average person understand the information on the label?

Choosing and using over-the-counter drugs

Safety depends on using a drug properly. For OTC drugs, proper use often relies on consumer self-diagnosis, which leaves room for error. For example, most headaches are not dangerous, but in rare cases, a headache is an early warning of a brain tumor or hemorrhage. Similarly, what seems like severe heartburn may signal an impending heart attack. Ultimately, people must use common sense in determining when a symptom or ailment is minor and when it requires medical attention and consult a doctor or pharmacist if they are unsure.
The guidelines for choosing and using OTC drugs are as follows:

- Make sure that the self-diagnosis is as accurate as possible. Do not assume the problem is “something that is going around.”
- Choose a product because the ingredients are appropriate for the condition, not because the product has a familiar brand name.

- Choose a product with the fewest appropriate ingredients. Products that attempt to relieve every possible symptom are likely to expose people to unnecessary drugs, pose additional risks, and cost more.
- Read the label carefully to determine the correct dose and precautions, including what conditions would make the drug a poor choice.
- When in doubt, ask a pharmacist or doctor what the most appropriate ingredient or product is.
- Ask a pharmacist to check for potential interactions with other drugs being used.
- Ask a pharmacist to identify possible side effects.
- Do not take more than the recommended dose.
- Do not take an over-the-counter drug longer than the maximum time suggested on the label. Stop taking the drug if symptoms worsen.
- Keep all drugs, including over-the-counter drugs, out of the reach of children.

Reading the labels of over-the-counter drugs

People who purchase OTC drugs should read and follow the instructions carefully. Because different formulations—such as immediate-release and controlled-release (slow-release) formulations—may have the same brand name, the label should be checked each time a product is purchased, and the dosage should be noted. Assuming that the dosage is the same is not safe. Also, different formulations with the same brand name may have different ingredients, so checking the ingredients on the label is important. For example, there are several dozen different Tylenol® formulations with a vast array of ingredients and doses. Some Maalox® products contain aluminum and magnesium hydroxide, while others contain calcium carbonate. When selecting a product, people should read the label carefully to determine which product is most appropriate for their particular problem. Labels on OTC drugs, which are required by the FDA, can help people understand a drug's benefits and risks as well as how to use the drug correctly. People should ask a pharmacist if they have any questions about an OTC product.

Often, the labels of OTC drugs do not list the full range of possible side effects. As a result, many people assume that these drugs have few, if any, side effects. For example, the package insert for one analgesic cautions people not to take the drug for more than 10 days for pain. However, the possible serious side effects that can occur with long-term use (such as life-threatening bleeding from the digestive tract) are not mentioned—not on the box, bottle, or package insert. Consequently, people with chronic pain or inflammation may take the drug for a long time without realizing that such use could lead to serious problems.

(Anonymous 2022b)

Over-the-counter medicines

You can buy many medicines for minor problems at the store without a prescription (over-the-counter).

Important tips for using over-the-counter medicines:

Always follow the printed directions and warnings. Talk to your health care provider before starting a new medicine.

Know what you are taking. Look at the list of ingredients and choose products that have fewer items listed.

All medicines become less effective over time and should be replaced. Check the expiration date before using any product.

Store medicines in a cool, dry area. Keep all medicines out of the reach of children.

Women who are pregnant or breastfeeding should talk to their provider before taking any new medicine.

Medicines affect children and older adults differently. People in these age groups should take special care when taking over-the-counter medicines.

Check with your provider before taking an over-the-counter medicine if:

Your symptoms are very bad.
You are not sure what is wrong with you.
You have a long-term medical problem or you are taking prescription medicines.

ACHES, PAINS, AND HEADACHES

Over-the-counter pain medicines can help with headache, arthritis pain, sprains, and other minor joint and muscle problems.

Acetaminophen -- Try this medicine first for your pain. DO NOT take more than 3 grams (3,000 mg) on any one day. Large amounts can harm your liver. Remember that 3 grams is about the same as 6 extra-strength pills or 9 regular pills.

Nonsteroidal anti-inflammatory drugs (NSAIDs) -- You can buy some NSAIDs, such as ibuprofen and naproxen, without a prescription.

Both of these medicines can have serious side effects if you take them in high doses or for a long time. *Tell your provider if you are taking these medicines many times a week. You may need to be checked for side effects.*

FEVER

Acetaminophen (Tylenol) and ibuprofen (Advil, Motrin) help reduce fever in children and adults. Take acetaminophen every 4 to 6 hours.

Take ibuprofen every 6 to 8 hours. DO NOT use ibuprofen in children younger than 6 months. Know how much you or your child weighs before giving these medicines.

Aspirin works very well for treating fever in adults. DO NOT give aspirin to a child unless your child's provider tells you it is OK.

COLD, SORE THROAT, COUGH

Cold medicines can treat symptoms to make you feel better, but they do not shorten a cold. Taking zinc supplements within 24 hours of the start of a cold may reduce the symptoms and duration of a cold.

NOTE: Talk to your provider before giving your child any type of over-the-counter cold medicine, even if it is labeled for children.

Cough medicines:

Guaifenesin -- Helps break up mucus. Drink lots of fluids if you take this medicine.
Menthol throat lozenges -- Soothes "tickle" in the throat (Halls, Robitussin, and Vicks).
Liquid cough medicines with dextromethorphan -- Suppresses the urge to cough (Benylin, Delsym, Robitussin DM, Simply Cough, Vicks 44, and store brands).

Decongestants:

Decongestants help clear a runny nose and relieve postnasal drip.
Decongestant nasal sprays may work more quickly, but they can have a rebound effect if you use them for more than 3 to 5 days. Your symptoms may get worse if you keep using these sprays.
Check with your provider before taking decongestants if you have high blood pressure or prostate problems.
Oral decongestants -- Pseudoephedrine (Contac Non-Drowsy, Sudafed, and store brands); phenylephrine (Sudafed PE and store brands).
Decongestant nasal sprays -- Oxymetazoline (Afrin, Neo-Synephrine Nighttime, Sinex Spray); phenylephrine (Neo-Synephrine, Sinex Capsules).

Sore throat medicines:

Sprays to numb pain -- Dyclonine (Cepacol); phenol (Chloraseptic).
Painkillers -- Acetaminophen (Tylenol), ibuprofen (Advil, Motrin), naproxen (Aleve).
Hard candies that coat throat -- Sucking on candy or throat lozenges can be soothing. Be careful in young children because of the choking risk.

ALLERGIES

Antihistamine pills and liquids work well for treating allergy symptoms.
Antihistamines that may cause sleepiness -- Diphenhydramine (Benadryl); chlorpheniramine (Chlor-Trimeton); brompheniramine (Dimetapp), or clemastine (Tavist)
Antihistamines that cause little or no sleepiness -- Loratadine (Alavert, Claritin, Dimetapp ND); fexofenadine (Allegra); cetirizine (Zyrtec)

Talk to your provider before giving medicines that cause sleepiness to a child, because they can affect learning. They can also affect alertness in adults.

You can also try:

Eye drops -- Soothe or moisten the eyes
Preventive nasal spray -- Cromolyn sodium (Nasalcrom), fluticasone (Flonase)

STOMACH UPSET

Medicines for diarrhea:
Antidiarrhea medicines such as loperamide (Imodium) -- These medicines slow down action of intestine and reduce number of bowel movements. Talk to your provider before taking them because they can worsen diarrhea caused by infection.
Medicines that contain bismuth -- May be taken for mild diarrhea (Kaopectate, Pepto-Bismol).
Rehydration fluids -- May be used for moderate and severe diarrhea (Analytes or Pedialyte).

Medicines for nausea and vomiting:

Liquids and pills for stomach upset -- May help with mild nausea and vomiting (Emetrol or Pepto-Bismol)
Rehydration fluids -- May be used to replace fluids from vomiting (Enfalyte or Pedialyte)
Medicines for motion sickness -- Dimenhydrinate (Dramamine); meclizine (Bonine, Antivert, Postafen, and Sea Legs)

SKIN RASHES AND ITCHING

Antihistamines taken by mouth -- May help with itching or if you have allergies
Hydrocortisone cream -- May help with mild rashes (Cortaid, Cortizone 10)
Antifungal creams and ointments -- May help with diaper rashes and rashes caused by yeast (nystatin, miconazole, clotrimazole, and ketoconazole)

(Anonymous 2022c)

References

FDA 2022. Understanding Over-the-Counter Medicines.

https://www.fda.gov/drugs/buying-using-medicine-safely/understanding-over-counter-medicines. Retrieved February 17, 2022.

Anonymous 2022a. Over-the-Counter Medicines Also called: Non-prescription drugs, OTC medicines. https://medlineplus.gov/overthecountermedicines.html. Retrieved February 17, 2022.

Anonymous 2022b. Over-the-counter (OTC) drugs are those available without a prescription. https://www.msdmanuals.com/home/drugs/over-the-counter-drugs/overview-of-over-the-counter-drugs. Retrieved February 17, 2022.

Anonymous 2022c. Over-the-counter medicines. https://medlineplus.gov/ency/article/002208.htm. Retrieved February 17, 2022.

How to make a first aid kit

A well-stocked first aid kit is a handy thing to have. To be prepared for emergencies:

Keep a first aid kit in your home and in your car.
Carry a first aid kit with you or know where you can find one.
Find out the location of first aid kits where you work.

First aid kits come in many shapes and sizes. You can purchase one from the Red Cross Store. Your local drug store may sell them. You can also make your own. Some kits are designed for specific activities, such as hiking, camping or boating.

Whether you buy a first aid kit or put one together, make sure it has all the items you may need:

Include any personal items such as medications and emergency phone numbers or other items your health-care provider may suggest.
Check the kit regularly.
Check expiration dates and replace any used or out-of-date contents.

The Red Cross recommends that all first aid kits for a family of four include the following:

2 absorbent compress dressings (5 x 9 inches) (Similar item available in the Red Cross Store)
25 adhesive bandages (assorted sizes), also found within our Family First Aid Kit (Similar item available in the Red Cross Store)
1 adhesive cloth tape (10 yards x 1 inch) (Similar item available in the Red Cross Store)
5 antibiotic ointment packets (approximately 1 gram) (Similar item available in the Red Cross Store)
5 antiseptic wipe packets (Similar item available in the Red Cross Store)
2 packets of aspirin (81 mg each) (Similar item available in the Red Cross Store)
1 emergency blanket
1 breathing barrier (with one-way valve)
1 instant cold compress, also found within our First Aid Kit
2 pair of nonlatex gloves (size: large)
2 hydrocortisone ointment packets (approximately 1 gram each) (Similar item found within the Be Red Cross Ready First Aid Kit)
1 3 in. gauze roll (roller) bandage
1 roller bandage (4 inches wide) (Similar item available in the Red Cross Store)
5 3 in. x 3 in. sterile gauze pads (Similar item available in the Red Cross Store)
5 sterile gauze pads (4 x 4 inches) (Similar item available in the Red Cross Store)
Oral thermometer (non-mercury/nonglass), also within the Deluxe All Purpose First Aid Kit
2 triangular bandages (Similar item available in the Red Cross Store)
Tweezers
Emergency First Aid guide

Reference

Anonymous 2022. Make a First Aid Kit. https://www.redcross.org/get-help/how-to-prepare-for-emergencies/anatomy-of-a-first-aid-kit.html. Retrieved March 5, 2022.

EXPLORE THE BEST MEDICAL AND HEALTH RESEARCH TOPICS IDEAS

In such a complex and broad field as medicine, writing an original and compelling research paper is a daunting task. From investigating public care concerns to cancer treatment studies, each student decides where his interests lie. Our goal is to help students find new angles to study and focus on relevant topics. With our resources, you can write an engaging and rigorous paper.

How to Choose Medical Research Paper Topics

Choosing good research paper topics is often more challenging than the writing process itself. You need to select a captivating subject matter that will grab the reader's attention, showcase your knowledge of a specific field, help you progress in your studies, and perhaps even inspire future research.

To accomplish that, you need to start with brainstorming, followed by thorough research. Here are some great tips to follow:

Pick an interesting topic - The key is to pick something that you find interesting, and yet make sure it's not too general or too narrow. It should allow you to delve deep into the subject matter and show that you're a professional who is ready to take on a challenge when it comes to your chosen field of medicine.

Narrow down your focus - Once you have a list of potential topics, sift through recent medical research papers to get up-to-date with the latest trends, developments, and issues in medicine and healthcare. Check out textbooks, news articles, and other relevant sources for more information related to your potential topics. If a particular condition or disease interests you (perhaps something that drew you to a career in medicine), there's your cue for narrowing down your topic.

Pinpoint the "why," "how," and "what" - Whether you are looking into nutrition research paper topics, controversial medical topics, nursing research topics, or anything in-between, ask yourself why each of them is important. How could they contribute to the available medical studies, if any? What new information could they bring to improve the future of medicine? Asking these questions will help you pick the right medical research paper topic that suits you and helps you move forward and reach your aspirations.

To help you on that quest, we've compiled a list of topics that you could use or that might inspire you to come up with something unique. Let's dive in.

New Medical Research Paper Topics

Are you interested in the newest and most interesting developments in medicine? We put hours of effort into identifying the current trends in health research so we could provide you with these examples of topics. Whether you hire a research paper writing service for students or write a paper by yourself, you need an appealing topic to focus on.

Epidemics versus pandemics
Child health care
Medical humanitarian missions in the developing world
Homoeopathic medicines – the placebo effect
Virus infections – causes and treatment
Is medical research on animals ethical
Vaccination – dangers versus benefits
Artificial tissues and organs
Rare genetic diseases
Brain injuries
Medical Research Topics for College Students

You don't know where to start with your medical research paper? There are so many things you could write about that the greatest challenge is to narrow them down. This is why we decided to help.

Antibiotics treatments
Chronic diseases
Palliative treatment
Battling Alzheimer's disease
How modern lifestyle affects public health
Professional diseases
Sleep disorders
Changes in physical and mental health due to aging
Eating disorders
Terminal diseases

Controversial Medical Topics for Research Paper

In healthcare, new discoveries can change people's lives in the blink of an eye. This is also the reason why there are so many controversial topics in medicine, which involve anything from religion to ethics or social responsibility. Read on to discover our top controversial research topics.

Implementing food standards
Gluten allergy
Assisted suicide for terminal patients
Testing vaccines on animals – ethical concerns
Moral responsibilities regarding cloning
Marijuana legalization for medical purposes
Abortion – medical approaches
Vegan diets – benefits and dangers
Increased life expectancy: a burden on the healthcare system?
Circumcision effects

Health Research Topics

Students conducting health research struggle with finding good ideas related to their medical interests. If you want to write interesting college papers, you can select a good topic for our list.

How environmental changes affect human health
Deafness: communication disorders
Household air pollution
Diabetes – a public danger
Coronaviruses
Oral health assessment
Tobacco and alcohol control
Diseases caused by lack of physical exercise
How urban pollution affects respiratory diseases
Healthy diets

Medicine Research Topics

Regardless of the requirements in your research assignment, you can write about something that is both engaging and useful in your future career. Choose a topic from below.

Causes for the increasing cancer cases
Insulin resistance
How terrorism affects mental health
AIDS/HIV - latest developments
Treating pregnant women versus non-pregnant women
Latest innovations in medical instruments
Genetic engineering
Successful treatment of mental diseases
Is autism a disease
Natural coma versus artificial coma

Healthcare Research Topics

Healthcare research includes political and social aspects, besides medical. For college students who want to explore how medicine is affected by society's values or principles, we provide examples of topics for papers. Select yours from the list below.

Government investment in healthcare services in the EU versus the USA
Inequalities in healthcare assistance and services
Electronic health records systems – pros and cons
Can asylums treat mental issues
Health care for prison inmates
Equipment for improving treatment of AIDS
Correlation between economic development and health care services across countries
Impact of smoking on organs
Heart attacks – causes and effects

Breast cancer – recent developments

Public Health Research Topics

For current examples of public health topics, browse our list. We provide only original, researchable examples for which you can easily find supporting data and evidence.

Public versus private hospitals
Health care professionals - management principles
Surgery failures – who is responsible
What legal responsibilities has the hospital administration
Patient service quality in public versus private hospitals
What benefits national health care systems have
Estimated costs of cancer treatments
Public health in developing countries
Banning tobacco ads – importance for public health
Government solutions to the anti-vaccine's movement

Mental Health Research Paper Topics

Mental health is one of the most complex areas of medicine, where things are never as clear as with other medical issues. This increases the research potential of the field with plenty of topics left for debate.

Causes of anxiety disorders
Bulimia versus anorexia
Childhood trauma
Depression
Mental health public policies
Dementia
Postpartum Depression
Posttraumatic Stress Disorder
Seasonal Affective Disorder
Schizophrenia

Anatomy Research Topics

Anatomy covers everything about the human body and how it works. If you find that intriguing and want to pay for medical research paper, start by selecting a topic.

Chemotherapy: how it affects the body
Thyroid glands – functions in the body
Human endocrine system
The liver
Heart diseases
How does the human muscular system develop

Lymphatic system – importance
Investigating genetic diseases
Digestive system
The spleen

Biomedical Research Topics

Biology and medicine often work together. For the newest changes in the biomedical field, check our topics.

Alzheimer's disease – paths for treatment
Vaccines and drug development in the treatment of Ebola
Antibiotic resistance
Biological effects caused by aging
Air pollution effects on health
Infectious disease past versus present
Regenerative medicine
Immunology
Biomedical diagnostics
Biomedical technology

Bioethics Research Topics

A controversial area of medicine, bioethics is where you get the chance to add personal input to a research topic and come up with new insights. You could consider these subjects.

Organ donation
Alternative or complementary medicine
Assisted suicide or the right to die
Artificial insemination or surrogacy
Chemical and biological warfare
Cloning
Contraception
Environmental bioethics
Eugenics
In Vitro fertilization

Cancer Research Topics

Are you writing a paper related to cancer causes, diagnosis, treatment or effects? Look below for a hot topic that it's easy to research and important for medical advance.
Ability of immune system cells to fight cancer

Computational oncology
Metastasis affected by drug resistance
Stem cells – applications for cancer treatment

Tumor microenvironment
Obesity and age in cancer occurrence
Early cancer detection - benefits
Artificial intelligence predicting cancer
Hematologic malignancies
Pathogen-related cancers

Clinical Research Topics

Learn more about clinical medicine by conducting more in-depth research. We prepared for you a list of relevant issues to touch upon.

Ethical concerns regarding research on human subjects
Subject recruitment
Budget preparation
Human subject protection
Clinical trials – financial support
Clinical practices for health professionals
Using vulnerable populations in clinical research
Quality assurance in clinical research
Academic clinical trials versus clinical trials units
Data collection and management

Critical Care Research Topics

Critical care is a key area in medical studies. Explore these topics in your research paper to gain more valuable knowledge in this field. You can also get in contact with nursing research paper writers.

Obesity and asthma – clinical manifestations
Chronic obstructive pulmonary disease
Rhythm analysis for cardiac arrest
Traumatic brain injury – fluid resuscitation
Hydrocortisone for multiple trauma patients
Care and nutrition for critically ill adults
Diagnosis of hypersensitivity pneumonitis
Coma and sedation scales
Artificial airways suctioning
Arterial puncture and arterial line

Pediatric Research Topics

Any topic that refers to health care for children, pregnant women, mothers, and adolescents goes under pediatric care.

Autism
Attention deficit hyperactivity disorder (ADHD)
Congenital heart disease in newborns
Adolescent medicine
Asthma
Neonatal medicine
Rare diseases in children and teenagers
Obesity and weight fluctuations
Behavioral sleep problems in children
Children with anemia

Dental Research Topics Ideas

Choose a topic on oral health or dental care from this list of the most interesting topics in the field.

How smoking affects oral health
Children's risk for dental caries
Dental anxiety
Types of dental materials – new advances
Bad breath bacteria
How diabetes affects oral health
Oral cancer
Dental pain – types, causes
Dental implants
Oral health-related quality of life

Dermatology Research Topics

Find the best research topic for your dermatology paper among our examples.

Atopic dermatitis
Contact dermatitis
Epidemiology behind uncommon skin disorders
Cutaneous aging
Risk factors of melanoma skin cancer
Acne versus rosacea
Genetic testing for skin conditions
Effects of cosmetic agents on skin health
Improving skin barrier with pharmaceutical agents
Skin manifestations of autoimmune disorders

Primary Care Research Topics

Write a primary care paper that can demonstrate your research skills and interest in powerful scientific findings.

Primary care for vulnerable/uninsured populations
Interpersonal continuity in care treatment
How primary care contributes to health systems
Primary care delivery models
Developments in family medicine
Occupational/environmental health
Pharmacotherapy approaches
Formal allergy testing
Oral contraception side effects
Dietary or behavioral interventions for obesity management

Pharmaceutical Research Topics

Pharma students who need paper topics can use one from our list. We include all things related to pharmacy life.

Drugs that can treat cancer
Drug excretion
Elimination rate constant
Inflammatory stress drug treatment
Aspirin poising
Ibuprofen – dangers versus benefits
Toxicodynamics
Opioid use disorder
Pharmacotherapy for schizophrenia
Ketamine in depression treatment

Medical Anthropology Research Topics

Medical anthropology unites different areas of human knowledge. Find powerful ideas for a paper below.

Cultural contexts regarding reproductive health
Women sexuality
Anthropological aspects of health care
Contributions of social sciences to public health
Euthanasia and medical ethics across cultures
Health-related behavior in adults across cultures
Transcultural nursing
Forensic psychiatry
Symptoms of Celiac Disease – a disease with no symptoms

Nursing ethics

Paramedic Research Paper Topics

Topics for paramedic research must be based on evidence, data, statistics, or practical experience. Just like ours.

Trends and statistics in EMS
Disaster medicine
Mass casualties
Pandemics and epidemics
Infection control
Coronaviruses
Basic versus advanced life support
Scene safety in EMS
Shock management
Motor vehicle accidents

Surgery Research Topics

Discover all the intricacies of surgeries that save lives by writing about our topics.

Medical malpractice and legal issues
Methicillin-resistant Staphylococcus aureus
Sepsis
Pain management
Perioperative nursing
Wound management
Colorectal cancer surgery
Breast cancer surgery
Minimally invasive surgeries
Vascular disease

Radiology Research Paper Topics

Find a radiology topic related to your academic interests to write a successful paper.
Using MRI to diagnose hepatic focal lesions

Multidetector computer tomography
Ultrasound elastography in breast cancer
Assessing traumatic spinal cord injuries with MRI diffusion tensor imaging
Sonographic imaging to detect male infertility
Role of tomography in diagnosing cancer
Brain tumor surgery with magnetic resonance imaging
Bacterial meningitis imaging

Anatomy and Physiology Research Paper Topics

Any ideas for a medical research paper? We have included the most important topics for an anatomy and physiology paper.

What role has the endocrine system
Staphylococcus aureus
Environmental factors that affect development of human muscular system
What role has the lymphatic system
An investigation of genetic diseases
Explaining the aging process
The digestive tract
Effects of stress on cells and muscles
Evolution of the human nervous system
What role has the cardiovascular system

Healthcare Management Research Paper Topics

There are numerous topics you could write about when it comes to healthcare management. There's a wide range of options to pick, from infrastructure, staff, and financial management to HR and patient management. Here are some of the top healthcare management research paper options.

Medical talent acquisition and retention
Best methods for enhancing preventative care measures
The role of telemedicine in reinventing healthcare management
Patient care and the ability to pay for healthcare
Mid-level healthcare providers in the emergency department
The opioid crisis: policies and programs
Urgent care and walk-in clinics
Hospital emergency management plan during an epidemic
Hospital records management and patient privacy
Financial crises: challenges and opportunities

Medical Ethics Research Paper Topics

Medical ethics is a field that opens the door to numerous compelling topics for research papers. Here are some of the most appealing ones you could tackle.

Clinical research on humans
Vaccines and immunization
Religious beliefs in healthcare
Euthanasia and physician-assisted suicide
Ethical issues across cultures
Amniocentesis or prenatal birth defect testing
Medical malpractice and going back to work

Racial and ethnic preferences and perceptions in organ donations
Racial and ethnic disparities in healthcare
Ethical concerns of AI in healthcare

Conclusion

If you need further assistance with your medical research paper, StudyClerk is here for you. Our expert writers can provide you with top-notch research and help you write an impressive paper. Contact us anytime, pick your writer, tell them more about your topic, and get a unique, plagiarism-free research paper with impeccable grammar and formatting.

Reference

Anonymous 2020 (February 7). EXPLORE THE BEST MEDICAL AND HEALTH RESEARCH TOPICS IDEAS. https://studyclerk.com/blog/medical-research-topics. Retrieved March 25, 2022.

How to become a doctor

Developing the skills and knowledge necessary to practice medicine requires a great deal of time and effort, so it is important to research the training process before taking the plunge. The following section outlines how physicians prepare for their careers.

Step 1
Complete an Undergraduate Education

Medical school admissions boards require all applicants to earn bachelor's degrees from accredited colleges and universities. While there is no specific undergraduate degree recommended for all medical school hopefuls, The College Board lists pre-medicine, biology and exercise science among potential majors.

Step 2
Pass the MCAT Examination

College juniors interested in a career as a doctor should register for and take the Medical College Admission Test (MCAT). The MCAT is a standardized, multiple-choice examination used by medical school admission committees to assess a candidate's likelihood of succeeding in their program.

Step 3
Apply to Medical School

There is no required timeline for applying to medical school. Students generally begin the application process during the summer after their junior year in college, but some choose to take a year off after completing their undergraduate degrees before applying. Most medical schools in the US use the American Medical College Application Service (AMCAS), a centralized application processing service from the Association of American Medical Colleges. Students select their target medical schools and submit a single application to AMCAS, which distributes the application to each institution.

Step 4
Complete Training at Medical School

The path to becoming a physician begins in medical school, which generally requires four years of full-time study beyond one's undergraduate studies. Curriculum is divided between classroom-based instruction in the sciences and clinical rotations where students develop applied skills in various areas of medicine.

Step 5
Pass Parts I & II of the United States Medical Licensing Examination (USMLE)

In order to practice medicine legally in the US, students must take and receive a passing score on the United States Medical Licensing Examination (USMLE), a three-part examination taken

during and after medical school. Medical students must pass the first part of the examination, which covers basic medical principles, before entering their third year of studies. During their fourth year, students must pass the second part of the exam, which covers clinical diagnosis and disease development.

Step 6
Match with Residency

During their final year of medical school, students start narrowing down their medical specialty options (e.g. pediatrics, anesthesiology). They submit an application for residency and are matched to open residency programs throughout the country.

Step 7
Graduate from Medical School & Start Residency

Newly-minted doctors transition from graduate school residency programs. These programs generally require at least three years to complete and provide in-depth training in students' chosen specialties.

Step 8
Pass Part III of United States Medical Licensing Examination (USMLE) and Finish Residency

The final step of the residency process is to complete Part III of USMLE. This examination covers clinical management and assesses the doctor's ability to practice medicine safely and effectively.

Step 9
Earn Board Certifications

Once their medical educations are complete, doctors may obtain certification in their chosen field. There are 24 specialty boards that certify physicians in hundreds of specialties and subspecialties. Board certifications require a written and, in some cases, an oral examination.

Step 10
Get a State License

Medical licensure is governed at the state-level by state boards of medicine, and each sets its own licensing requirements and procedures. Trained and board-certified doctors must apply for state medical licenses before they enter the field.

Step 11
Apply for Jobs as a Doctor

The final step to become a doctor is securing a job. Many doctors begin their search during residency. It is common for residents to transition into full-time positions after their residencies

end. However, some doctors choose to go on the open market and seek out career openings. Other physicians are contacted by recruiters to fill a position.

What Does a Doctor Do?

Doctor Career Basics

Physicians and surgeons are authorities in the practice of medicine. They assess patients, diagnose diseases and illnesses, and treat a variety of conditions. They may order and perform tests and use those tests to diagnose and treat their patients. Surgeons also perform operations and more complicated invasive procedures on patients. Doctors and surgeons work in a variety of settings, from hospitals and private offices to health clinics and schools.
Doctor Salaries & Job Growth

Doctor Salaries Across the US

Medicine is one of the highest paying occupations in the country. In fact, the Bureau of Labor Statistics reports that doctors account for 45 percent of the 20 highest-paying jobs in the country. Average salaries easily surpass six figures, with some surgeons and physicians able to command salaries greater than $400,000. Numerous factors influence doctors' earning potential, including specialization, education and location. Use the map below to learn more about doctor salaries by state.

Doctor Job Growth

Aging, insurance reform and chronic illness drive steady demand for healthcare services. The Administration on Aging projects that the number of Americans aged 65 and older will account for more than 21 percent of the population by 2040, and the Affordable Care Act expanded Medicare and provided insurance to nearly 17 million people who previously did not have insurance. Finally, according to the Centers for Disease Control and Prevention, early half of the country's population—approximately 117 million people—are living with a chronic disease.
Preparing for a Doctor Career: Medical Schools & Pre-med Programs

Pre-med Programs & Degrees

Undergraduate studies are important for students preparing for the rigors of medical school. Because no specific major is required to be admitted to medical school, most universities do not offer an explicit pre-medicine major. Most students enroll in other disciplines that can provide the experience admissions boards seek in qualified applicants. Two of the most common majors with a pre-med emphasis include biology and chemistry.

Bachelor of Science in Biology
Focus of study

The Bachelor of Science in Biology with a pre-medicine emphasis includes specialized courses that develop students' understanding of organic and general chemistry; the fundamentals of

biochemistry and microbiology; and core concepts in human anatomy and physiology. This structured four-year course plan prepares students to take the MCAT examination at the end of their junior year.
Example Courses
Organic Chemistry
Pharmacology
Genetics
Human Physiology
Pathophysiology

Bachelor of Science in Chemistry
Focus of Study

The Bachelor of Science in Chemistry for pre-med students offers a track of coursework in the natural sciences and humanities aimed at preparing competitive candidates for medical school. Curricula emphasize chemistry and biology courses, such as organic chemistry, that satisfy the admission requirements of medical schools. Chemistry programs help students gain key laboratory and research skills while preparing them to take the MCAT at the end of their junior year.
Example Courses
Analytical Chemistry
Organic Chemistry
Biochemistry and Molecular Biology
Polymer Chemistry
Microbiology

Medical School Admission Requirements

Medical school admission committees enroll students who come a variety of backgrounds, locations and undergraduate programs. Although admission requirements vary from school to school, coursework and testing requirements generally remained unchanged. Below is an overview of common medical school requirements.

Standardized Testing

Students must take and submit scores from the Medical College Admissions Test (MCAT).

Pre-Medical Coursework

Students need to complete a series of prerequisite coursework, particularly in the sciences. Below is a general overview of the types of classes required for admission:

Course	**DESCRIPTION**
Biology	One year with laboratory
Chemistry	One year with laboratory

Organic Chemistry	One semester with laboratory
Biochemistry	One semester
Calculus	One semester
Statistics	One semester
Physics	One year with laboratory
Humanities	English, history, political science and other classes

Letters of Recommendation

Two letters from faculty members, one in science and one from a non-science field. Letters from college advisers and employers are also helpful.

Medical School Courses & Requirements

Medical school is a major undertaking that requires dedication and hard work to complete. Learn more about what medical school entails, what students experience during their programs, and what happens after they graduate.

Who is the ideal medical school candidate?

There is no universally ideal medical school candidate. Medical school students come from diverse backgrounds, but most begin directly after finishing their bachelor's degrees. Their undergraduate educations vary – some students study the sciences (e.g. biology), while others major in the humanities (e.g. English).

Medical schools seek candidates that bring diversity to the workforce, are sincerely committed to service and have an unyielding interest in medicine. Attractive candidates should be analytical thinkers with good problem solving skills. They should be strong communicators who can establish relationships with others and make challenging decisions while under pressure.

Are there different types of medical schools?

There are two types of medical school programs in the United States: allopathic (MD) and osteopathic (DO). Both programs take a similar approach to curriculum. However, osteopathic programs place a greater emphasis on holistic and therapeutic treatment techniques.

How long does medical school take to complete?

Medical school curricula traditionally require four years to complete, then students assume residencies that lasts at least three years (but can go upwards of 11 years). Some doctors may go on to complete additional years of training in a fellowship.

What are the requirements in medical school?

Although specific courses can by school, medical school curricula generally follow the same four-year format. The first two years focus on the fundamentals of body structure and anatomy,

with coursework in biochemistry, gross anatomy, human organ systems, infectious diseases and pharmacology. During this time, students familiarize themselves with the role of the physician by studying ethics, health law, patient interaction and medical examinations.

In order to move to year three of medical school, students must take and pass Step 1 of the United States Medical Licensing Examination. This test ensures students have learned the core scientific fundamentals required to practice medicine in a competent manner.

During the final two years of medical school, students participate in clinical rotations in primary and specialized care settings. Clinical rotations serve as an opportunity for students to apply their classroom-based knowledge in real-world, supervised experiences with patients. In order to graduate and move into a residency, students must also take and pass Step 2 of the United States Medical Licensing Examination. Step 2 assesses the candidate's medical knowledge and clinical science skills.

Once they've completed their core curriculum and clinical rotations, medical students move to the residency phase of their training.

What type of courses are taught in medical school?

Diagnostic Tools and Testing

In this course, students are introduced to diagnostic tools used in pathology, radiology, laboratory medicine, clinical epidemiology, and other areas. Students study diagnostic information and learn how to develop systematic approaches to patient care.

Skills Gained

Ability to select appropriate diagnostic tests
Interpret and analyze diagnostic test results
Use clinical knowledge to evaluate specific screening tests

Human Structure and Development

This class serves as a foundational introduction to human anatomy, a basis for understanding the central concepts of bodily function. Topics of study range from nervous and endocrine systems to digestive and articular systems.

Skills Gained

Use of proper anatomical terms
Ability to visualize structural relationships in the body
Interpret radiographs, CTs, and MRIs

Foundations of Cells and Molecules
Students study the fundamentals of life science, learning about the relationship between pharmacology, biochemistry, cell and molecular biology, and genetics.

Skills Gained

Knowledge of fundamental cellular processes
Genetic factors for health and hereditary disease
Clinical techniques for molecular biology researcher

Clinical Epidemiology

This course asks students to use research literature to answer a clinical question, teaching them to evaluate research articles and discuss medical information with the context of practicing evidence-based medicine.

Skills Gained

Statistical analysis
Knowledge of research study design
Critical use of research

Critical Care

In this class, students receive a practical learning experience in the treatment and care of critically ill patients, including an educational review of the clinical principles of care.

Skills Gained

Care principles in acute care settings
Conducting rounds
Case management

What is a residency?

As they near their final year of medical school, students begin preparing for residency. A residency is a three- to eleven-year training program where doctors receive specialized professional training guided and supervised by experienced physician educators. Residency length varies by specialty. For example, pediatricians participate in a three-year residency while urologists have five-year residencies. The residency matching process takes nearly a year. Students submit applications through the National Residency Matching Program (NRMP), a process that matches them to open postgraduate residency programs. To complete their programs, residents must pass Step 3 of the USMLE. This examination tests the candidate's clinical assessment and management knowledge and skills.

What is a fellowship?

After finishing their residencies, physicians may choose to complete fellowships in their respective specialties, such as oncology (cancer treatment) or neurology.

Doctor Career Concentrations

Medicine offers many different practice options. The American Medical Association lists more than 200 specialty categories and the Accreditation Council for Graduate Medical Education more than 140 specialties and subspecialties. Examples include: allergy and immunology; anesthesiology; critical care medicine; gastroenterology; orthopedic surgery and cardiology. Read more about five different career specializations for graduates of medical school.

Family Physician
Median salary: $192,120

Family physicians provide general medical care to patients in clinics, hospitals, private offices and other medical settings. They diagnose and treat illness--including acute and chronic health problems--and provide preventative care services. These services include immunizations, health screening tests and annual checkups. In cases of serious illness or disease, family physicians collaborate with other medical specialists to arrange appropriate care.

Anesthesiologist
Median salary: $248,100

Anesthesiologists are specialized physicians who administer and monitor anesthesia for patients during diagnostic and surgical procedures. During these procedures, anesthesiologists monitor the condition of the patient, including his or her consciousness level, body temperature and vital signs. They may also monitor neurological function along with blood pressure and oxygen levels during neurologic procedures. Once a procedure is complete, anesthesiologists coordinate with post-anesthesia nurses to ensure the patient recovers comfortably.

Pediatrician
Median salary: $183,180

Pediatricians are physicians that treat children across the lifespan – from birth to young adulthood. They are concerned not only with the physical care of children, but their emotional and social development as well. Pediatricians provide a wide range of services, from preventative health (e.g. immunizations and health screenings) to the diagnosis, assessment and treatment of serious illnesses and diseases.

Surgeon
Median salary: $247,520

Surgeons treat patients with acute problems in different body areas, such as the digestive tract, skin or abdomen. General surgeons use minimally invasive procedures and techniques to treat

conditions ranging from thyroid disorders to tumors in the breast. Some surgeons specialize in specific areas of medicine, like oncology, pediatrics, organ transplant, orthopedics and trauma.

Internist
Median salary: $196,520

Internists provide complex medical care to patients dealing with both common and chronic illnesses. Working in offices or hospitals, internists diagnose and treat diseases that impact the circulatory (blood), digestive (stomach), cardiovascular (heart), respiratory (lungs) and endocrine (kidney) systems. They also perform wellness checkups, provide preventative care services, and may treat patients facing other issues, including substance abuse or mental health problems.

Components of a Successful Doctor Career: Skills, Credentials, Tools & Technology

As outlined by the Association of American Medical Colleges, medical students should develop a collection of specific competencies to succeed both in medical school and in their chosen specialties.

Skills

Professionalism
The ability to handle professional responsibilities and tasks in an ethical, safe and sensitive manner.

Patient Care
Providing compassionate, appropriate, and effective patient care. Practice-based learning and improvement

Dedication
Wanting to learn more about the practice of medicine the latest best practices within medical care.

Medical Knowledge
Robust medical knowledge and how it can be applied during patient care.

Communication
Interpersonal skills and the ability to communicate effectively with patients, their families and other medical professionals.

Tools

Endoscope
Valve mask resuscitators
Tongue Depressor
Dressing forceps
Otoscope

Oxygen masks
Thermometer
Operating scissors
Sphygmomanometer
Billing software
Stethoscope
Medical records software
Hypodermic needle
Ventilator
Nebulizer
Ophthalmoscope

Reference

Anonymous 2022. How to become a doctor. https://www.learnhowtobecome.org/doctor/. Retrieved July 15, 2022.

What Are the Different Types of Doctors?

You may call them simply doctors. But most doctors have extra expertise in one type of medicine or another. In fact, there are several hundred medical specialties and subspecialties. Here are the most common types of doctors you'll likely see.

Allergists/Immunologists
They treat immune system disorders such as asthma, eczema, food allergies, insect sting allergies, and some autoimmune diseases.

Anesthesiologists
These doctors give you drugs to numb your pain or to put you under during surgery, childbirth, or other procedures. They monitor your vital signs while you're under anesthesia.

Cardiologists
They're experts on the heart and blood vessels. You might see them for heart failure, a heart attack, high blood pressure, or an irregular heartbeat.

Colon and Rectal Surgeons
You would see these doctors for problems with your small intestine, colon, and bottom. They can treat colon cancer, hemorrhoids, and inflammatory bowel disease.

Critical Care Medicine Specialists
They care for people who are critically ill or injured, often heading intensive care units in hospitals. You might see them if your heart or other organs are failing or if you've been in an accident.

Dermatologists
Have problems with your skin, hair, nails? Do you have moles, scars, acne, or skin allergies? Dermatologists can help.

Endocrinologists
These are experts on hormones and metabolism. They can treat conditions like diabetes, thyroid problems, infertility, and calcium and bone disorders.

Emergency Medicine Specialists
These doctors make life-or-death decisions for sick and injured people, usually in an emergency room. Their job is to save lives and to avoid or lower the chances of disability.

Family Physicians
They care for the whole family, including children, adults, and the elderly. They do routine checkups and screening tests, give you flu and immunization shots, and manage diabetes and other ongoing medical conditions.

Gastroenterologists
They're specialists in digestive organs, including the stomach, bowels, pancreas, liver, and gallbladder. You might see them for abdominal pain, ulcers, diarrhea, jaundice, or cancers in your digestive organs. They also do a colonoscopy and other tests for colon cancer.

Geriatric Medicine Specialists
These doctors care for the elderly. They can treat people in their homes, doctors' offices, nursing homes, assisted-living centers, and hospitals.

Hematologists
These are specialists in diseases of the blood, spleen, and lymph glands, like sickle cell disease, anemia, hemophilia, and leukemia.

Hospice and Palliative Medicine Specialists
They work with people who are nearing death. They're experts in pain management. They work with a team of other doctors to keep up your quality of life.

Infectious Disease Specialists
They diagnose and treat infections in any part of your body, like fevers, Lyme disease, pneumonia, tuberculosis, and HIV and AIDS. Some of them specialize in preventive medicine or travel medicine.

Internists
These primary-care doctors treat both common and complex illnesses, usually only in adults. You'll likely visit them or your family doctor first for any condition. Internists often have advanced training in a host of subspecialties, like heart disease, cancer, or adolescent or sleep medicine. With additional training (called a fellowship), internists can specialize in cardiology, gastroenterology, endocrinology, nephrology, pulmonology, and other medical sub-specialties.

Medical Geneticists
They diagnose and treat hereditary disorders passed down from parents to children. These doctors may also offer genetic counseling and screening tests.

Nephrologists
They treat kidney diseases as well as high blood pressure and fluid and mineral imbalances linked to kidney disease.

Neurologists
These are specialists in the nervous system, which includes the brain, spinal cord, and nerves. They treat strokes, brain and spinal tumors, epilepsy, Parkinson's disease, and Alzheimer's disease.

Obstetricians and Gynecologists
Often called OB/GYNs, these doctors focus on women's health, including pregnancy and childbirth. They do Pap smears, pelvic exams, and pregnancy checkups. OB/GYNs are trained in both areas. But some of them may focus on women's reproductive health (gynecologists), and others specialize in caring for pregnant women (obstetricians).

Oncologists
These internists are cancer specialists. They do chemotherapy treatments and often work with radiation oncologists and surgeons to care for someone with cancer.

Ophthalmologists
You call them eye doctors. They can prescribe glasses or contact lenses and diagnose and treat diseases like glaucoma. Unlike optometrists, they're medical doctors who can treat every kind of eye condition as well as operate on the eyes.

Osteopaths
Doctors of osteopathic medicine (DO) are fully licensed medical doctors just like MDs. Their training stresses a "whole body" approach. Osteopaths use the latest medical technology but also the body's natural ability to heal itself.

Otolaryngologists
They treat diseases in the ears, nose, throat, sinuses, head, neck, and respiratory system. They also can do reconstructive and plastic surgery on your head and neck.

Pathologists
These lab doctors identify the causes of diseases by examining body tissues and fluids under microscopes.

Pediatricians
They care for children from birth to young adulthood. Some pediatricians specialize in pre-teens and teens, child abuse, or children's developmental issues.

Physiatrists
These specialists in physical medicine and rehabilitation treat neck or back pain and sports or spinal cord injuries as well as other disabilities caused by accidents or diseases.

Plastic Surgeons
You might call them cosmetic surgeons. They rebuild or repair your skin, face, hands, breasts, or body. That can happen after an injury or disease or for cosmetic reasons.

Podiatrists
They care for problems in your ankles and feet. That can include injuries from accidents or sports or from ongoing health conditions like diabetes. Some podiatrists have advanced training in other subspecialties of the foot.

Preventive Medicine Specialists
They focus on keeping you well. They may work in public health or at hospitals. Some focus on treating people with addictions, illnesses from exposure to drugs, chemicals, and poisons, and other areas.

Psychiatrists
These doctors work with people with mental, emotional, or addictive disorders. They can diagnose and treat depression, schizophrenia, substance abuse, anxiety disorders, and sexual and gender identity issues. Some psychiatrists focus on children, adolescents, or the elderly.

Pulmonologists
You would see these specialists for problems like lung cancer, pneumonia, asthma, emphysema, and trouble sleeping caused by breathing issues.

Radiologists
They use X-rays, ultrasound, and other imaging tests to diagnose diseases. They can also specialize in radiation oncology to treat conditions like cancer.

Rheumatologists
They specialize in arthritis and other diseases in your joints, muscles, bones, and tendons. You might

see them for your osteoporosis (weak bones), back pain, gout, tendinitis from sports or repetitive injuries, and fibromyalgia.

Sleep Medicine Specialists
They find and treat causes behind your poor sleep. They may have sleep labs or give you take-home tests to chart your sleep-wake patterns.

Sports Medicine Specialists
These doctors diagnose, treat, and prevent injuries related to sports and exercise.

General Surgeons
These doctors can operate on all parts of your body. They can take out tumors, appendices, or gallbladders and repair hernias. Many surgeons have subspecialties, like cancer, hand, or vascular surgery.

Urologists
These are surgeons who care for men and women for problems in the urinary tract, like a leaky bladder. They also treat male infertility and do prostate exams.

Reference

Whitbourne K. 2020. What Are the Different Types of Doctors? https://www.webmd.com/health-insurance/insurance-doctor-types

Drugs & Medicines – What is the difference?

You consume drugs in hope for good health and restoring normal bodily functions – but end up getting sicker? Why do you think that is? Drugs don't cure! They only temporarily relieve or suppress the symptoms. Medicines alone help total cure! In reality, the Body & Mind can completely cure themselves with the right kind of help – medicines.

Do you know the difference between a drug and a medicine? Contrary to the normal belief that they are synonymous, they are actually quite different. Drugs take away control of your body & mind from YOU. Medicines reverse this and restore the control back to YOU.

A drug is a chemical substance that takes control of your body or mind depending on its own inherent nature. For example when you take a sleeping pill, it puts you to sleep no matter how much you want to be awake! It rules over your body & mind. You can repeat this exercise many times and you will experience the same each time.

It does not stop there! Subsequently when you want to sleep, it will make your body ask for the pill again. As you start yielding to its demand, it will keep asking progressively for an increased dose for the same amount of sleep while reducing the quality of sleep! You will finally end up in a state that unless you take these pills, you simply cannot sleep. This state is called drug dependence. Your life will not be under your control – but the drug's.

Painkillers work in a similar way. They do not resolve the cause of the pain. It temporarily makes you forget the pain (or not feel it). Pain will recur shortly as the cause has not been addressed and remains unresolved – you will again be forced to seek help of a pain killer. This process will progress slowly and steadily asking for a larger dose every time. Painkillers then become the master and you the slave again!

The story is no different with pills for Hypertension or Diabetes or any other disease. An acute condition becomes chronic and you are the permanent victim.All drugs eventually create a growing market for new drugs to counteract and compensate for their ill effects! Your body will end up becoming the warehouse of different dumped drugs – and they will not simply sit there – but harm you immensely.

A medicine is the substance that helps restore 'normalcy' to your body & mind. Normalcy is actually nothing but your volitional control over your own body & mind. Hence its action can be seen to be the exact opposite of the drug. Properties of a good medicine are that you will never compulsively require the medicine and there is no threat of discomfort or danger when not taken on time.

Have you seen the cases of patients of diabetes and hypertension resulting in other terrible complications when the prescription drug is not taken on time every day? This is because the control is with the drugs here. But in the case of medicines – control over your body & mind is normally handed back to you – with a little bit of help from the right medicine.

Medicine has very close similarity with food & rest in its basic action. When you are thirsty or dehydrated – you cannot function normally! Then pure water works like medicine. When you are hungry or famished – simple food works like medicine. When you are tired & fatigued – normal sleep works like medicine. Medicines are generally harmless when there is no excess or abuse.

All substances can be made to work in 3planes Food, Medicine or Poison! Common table salt (sodium chloride) is food and a taste enhancer. It is also a life saver in cases of dehydration as a part of saline water. Mind you – it can kill too in cases of Hypertension! How come – it is the same substance? Yes! The difference is how it's taken and how much.

When food is made to act like a medicine – there are normally no adverse side-effects! This is the driving principle of **VedaCeuticals** a new science & technology! **VedaCeuticals** is an important and integral part of holistic health.

You can be self-sufficient and thereby self-dependent. If you have the will & resolve, we have the know-how & do-how. All you need is to make up your mind and ask – and we will provide all the wisdom that we have gained from years of research and experience!

References

Ayyangar 2022. Drugs & Medicines – What is the difference? https://www.ebnl.org/blogs/drugs-medicines-what-difference. Retrieved May 27, 2022.

Hospital Care Team Members

Depending on the care that is needed, a person staying in the hospital may interact with many different staff members every day. If health care practitioners do not introduce themselves and explain their role, the person or family members should ask them to do so.

A hospital care team includes many different practitioners.

Attending physician
The attending physician is the leader of the team and has responsibility for all decisions made that affect a person's care, including diagnosis, treatments, and supervision of the remainder of the team.

Based on the problem that brought the person to the hospital, the attending physician may be a hospitalist (a doctor who is trained in internal medicine and works only with people who are hospitalized), a surgeon, or another specialist physician. In smaller communities, the person's primary care doctor may act as the attending physician.

Residents, interns, and medical students (house staff)
Some hospitals are designated as teaching hospitals. That is, the hospital team includes medical students who are at various stages of education and who are supervised by the attending physician.

A resident or intern is a fully licensed doctor who is engaged in further training after graduating from medical school.

Although these team members are not attending physicians, they are often active members of the team.

Specialists
When people have complex or serious medical problems, the attending physician sometimes requests that specialists evaluate the person and recommend how to best diagnose and treat the problems. For example, the specialist may be a doctor who is extensively trained in the diagnosis and treatment of disorders of the heart (cardiologist), kidneys (nephrologist), or cancer (oncologist). In other cases, the specialist may be a surgeon who has particular expertise in one area, such as the brain, spine, and nerves (neurosurgeon) or muscles, bones, and joints (orthopedic surgeon).

Registered nurses
People usually have more contact with the registered nurses (RNs) assigned to their care than any other member of the team. RNs give drugs to people and monitor and evaluate their physical and emotional needs. When a person's condition suddenly changes, RNs are often the first to detect the change. RNs then report the change to the attending physician or house staff. RNs may be charge nurses or nurse supervisors, organizing and monitoring overall nursing care in a hospital unit.

Licensed practical nurses
Licensed practical nurses (LPNs) are supervised by RNs and provide basic medical and nursing care. For example, LPNs check blood pressure, insert catheters, and help people bathe and dress. LPNs also talk to people about their health care, answer their questions, and report how they are doing to RNs and doctors.

Nurse practitioners and physician's assistants
Nurse practitioners and physician's assistants (PAs) work closely with the attending physician to coordinate a person's daily care. They also help with doing physical examinations and ordering drugs and treatments when people have more common or routine medical or surgical problems. Although nurse practitioners and PAs are not doctors, they have advanced training in diagnosis and treatment. Nurse practitioners and PAs are supervised by doctors.

Patient advocate
Patient advocates are non-medical administrators employed by the hospital to assist patients receiving care there. In general, they handle complaints that people have about their treatment or health care providers. People can meet with a patient advocate if they feel uncomfortable discussing concerns directly with their health care providers or they feel that their concerns have not been addressed.

Patient care technicians
Traditionally called nurse's aides, patient care technicians help nurses with people's care. Their duties may include

- Obtaining vital signs (measuring blood pressure and temperature)
- Moving people to and from a bed or wheelchair
- Helping people with walking
- Providing items for people's comfort (such as pillows and blankets)
- Sometimes, helping feed people who cannot feed themselves

Physical therapists
Physical therapists evaluate and treat people who have difficulty functioning—for example, difficulty walking, changing positions, or transferring from a bed to a chair. These problems may develop or worsen in the hospital because people have to stay in bed a long time (bed rest), as may occur after surgery, or because their disorder worsens.
Physical therapists assess people's strength, endurance, and coordination and design brief in-hospital exercise programs to help people function better physically and become more independent. Often, physical therapists help doctors determine whether people are likely to be able to function on their own at home after they are discharged from the hospital or whether they may need help at home or need to stay at a skilled nursing facility for additional physical therapy.

Occupational therapists
Occupational therapists assess people's ability to do their daily activities. These activities include eating, dressing, grooming, bathing, using the toilet, cooking, and cleaning.
Occupational therapists can recommend strategies and devices to help people function more independently.

Speech pathologists
Speech pathologists work closely with people who have had a stroke or who have another disorder that interferes with swallowing or communication. For example, if a stroke causes problems with swallowing, speech pathologists recommend that the person eat foods with certain textures. They can suggest ways to swallow that can prevent food from going into the lungs instead of the stomach. They also evaluate the thought processes involved in communication.

Hospital pharmacists
Pharmacists specialize in how drugs work and interact with each other. Hospitals have pharmacists on their staff who supervise the use of drugs in the hospital. If needed, hospital pharmacists teach people how to safely and effectively take the drugs prescribed for them. For example, pharmacists may advise people to avoid specific foods that interact with their prescribed drugs or teach people how to inject drugs (such as insulin) at home. Hospital pharmacists also provide information to doctors and answer questions about specific drug actions and interactions.

Social workers
Social workers provide support, information, and education. They help people prepare for discharge from the hospital by identifying and arranging helpful services that can be provided in the home and community. For example, they may refer people to a skilled nursing facility if people are not well enough to return home and need ongoing care and therapy after discharge from the hospital. Social workers also coordinate certain home health care needs, including a visiting nurse or physical therapist and medical equipment such as wheelchairs and hospital beds.

Dietitians
Registered dietitians have specialized nutritional and medical training that helps them determine a person's dietary needs and plan the person's meals in and out of the hospital, as requested by the attending physician. When planning meals, dietitians consider the person's personal, cultural, and religious food preferences.

Certain medical conditions have very specific dietary requirements. For example, people with diabetes need a low-sugar diet, and some people with kidney problems need a low-potassium diet. Dietitians can advise people about which foods satisfy these requirements and which foods they should avoid.

Interpreters
For deaf or hard-of-hearing people and for people whose first language is not English, hospitals provide an interpreter who has special skills in medical terminology. Sometimes the

interpreter is present in person, and sometimes, the interpreter is available by telephone or video conference in the person's hospital room.

Rapid response team
Rapid response teams are groups of designated hospital staff (often a doctor, nurse, and respiratory therapist) who quickly come to a person's hospital room if there is any indication that their condition is deteriorating, such as abnormal vital signs, trouble breathing, chest pain, or signs of a stroke. After ordering tests or starting treatments to stabilize a person's condition, the team contacts the attending physician and may move the person to another area of the hospital for specialized monitoring or treatment.

Other team members
Other staff members may be involved in a person's hospital care. They may include a radiologist and radiology technician, a respiratory therapist for people with breathing problems, staff members to help transport people within the hospital, clergy, and hospital volunteers.

References

Pistoria MJ. 2022. Hospital Care Team Members. https://www.msdmanuals.com/home/special-subjects/hospital-care/hospital-care-team-members. Retrieved June 10, 2022.

Types of Therapy

Accelerated Experiential Dynamic Psychotherapy (AEDP)
Acceptance and Commitment Therapy
Adlerian Therapy
Animal-Assisted Therapy
Applied Behavior Analysis
Art Therapy
Attachment-Based Therapy
Bibliotherapy
Biofeedback
Brain Stimulation Therapy
Christian Counseling
Coaching
Cognitive Behavioral Therapy
Cognitive Processing Therapy
Cognitive Stimulation Therapy
Compassion-Focused Therapy
Culturally Sensitive Therapy
Dance Therapy
Dialectical Behavior Therapy
Eclectic Therapy
Emotionally Focused Therapy
Equine-Assisted Therapy
Existential Therapy
Experiential Therapy
Exposure and Response Prevention
Expressive Arts Therapy
Eye Movement Desensitization and Reprocessing Therapy
Family Systems Therapy
Feminist Therapy
Forensic Therapy
Gestalt Therapy
Human Givens Therapy
Humanistic Therapy
Hypnotherapy
Imago Relationship Therapy
Integrative Therapy
Internal Family Systems Therapy
Interpersonal Psychotherapy
Jungian Therapy
Marriage and Family Therapy
Mentalization-Based Therapy
Mindfulness-Based Cognitive Therapy
Motivational Interviewing
Multicultural Therapy

Music Therapy
Narrative Therapy
Neuro-Linguistic Programming Therapy
Neurofeedback
Parent-Child Interaction Therapy (PCIT)
Person-Centered Therapy
Play Therapy
Positive Psychology
Prolonged Exposure Therapy
Psychoanalytic Therapy
Psychodynamic Therapy
Psychological Testing and Evaluation
Rational Emotive Behavior Therapy
Reality Therapy
Relational Therapy
Sandplay Therapy
Schema Therapy
Social Recovery Therapy
Solution-Focused Brief Therapy
Somatic Therapy
Strength-Based Therapy
Structural Family Therapy
The Gottman Method
Therapeutic Intervention
Transpersonal Therapy
Trauma-Focused Cognitive Behavior Therapy

Reference

Psychology Today 2022. Types of Therapy. https://www.psychologytoday.com/us/types-of-therapy. Retrieved April 7, 2022.

Prefixes

Prefixes are located at the beginning of a medical term. The prefix alters the meaning of the medical term. It is important to spell and pronounce prefixes correctly.
Many prefixes that you find in medical terms are common to English language prefixes. A good technique to help with memorization is the following:
Start by reviewing the most common prefixes.
Consider common English language words that begin with the same prefixes.
Compare them to the examples of use in medical terms.

Common Prefixes

PREFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
A-, An-	Without; Lacking	Anemia
Andr/o-	Male	Androgen
Anti-	Against	Anticholinergic drugs
Auto-	Self	Autocrine
Bio-	Life	Biology
Chem/o-	Chemistry	Chemotherapy
Contra-	Against	Contraception
Cyt/o-	Cell	Cytokine
Dis-	Separation; Taking apart	Dissection
Dys-	Difficult; Abnormal	Dyspnea
Eu-	Good; Well	Eupnea
Fibr/o-	Fiber	Fibrosis
Gluco-, Glyco-	Glucose; Sugar	Glycogen
Gyn/o-, Gynec-	Female	Gynecology
Hydr/o-	Water	Hydrocephalus
Idio-	Self; One's own	Idiopathic
Lyso-, Lys-	Break down; Destruction; Dissolving	Lysosome

PREFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
Mal-	Bad; Abnormal	Malignant
Myc/o-	Fungus	Mycetoma
Necr/o-	Death	Necrosis
Neo-	New	Neonate
Oxy-	Sharp; Acute; Oxygen	Oxytocin
Pan-, Pant/o-	All or everywhere	Pancytopenia
Pharmaco-	Drug; Medicine	Pharmacist
Re-	Again; Backward	Rejuvenation
Somat/o-, Somatico-	Body; Bodily	Somatic cell

Body Part Prefixes

PREFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
Acous/o-	Hearing	Acoustic meatus
Aden/o-	Gland	Adenoid
Adip/o-	Fat	Adipocyte
Adren/o-	Gland	Adrenal cortex
Angi/o-	Blood vessel	Angioplasty
Arteri/o-	Artery	Arteriole
Arthr/o-	Joint	Arthroplasty
Bucc/o-	Cheek	Buccal cavity
Bronch/i-	Bronchus	Bronchioles
Burs/o-	Bursa	Bursa

Carcin/o-	Cancer	Basal cell carcinoma
Cardi/o-	Heart	Cardiology
Cephal/o-	Head	Cephalic flexure
Chol-	Bile	Cholesterol
Chondri-	Cartilage	Chondrosarcoma
Coron-	Heart	Coronary arteries
Cost-	Rib	Costal cartilage
Crani/o-	Brain	Cranium
Cutane-	Skin	Cutaneous
Cyst/o-, Cysti-	Bladder or sac	Cystoscopy
Derm-, Dermat/o-	Skin	Dermatologist
Duoden/o-	Duodenum	Duodenitis
Gastr-	Stomach	Gastrectomy
Gloss-	Tongue	Glossectomy
Hem-, Hema-, Hemat-, Hemo-, Hemat/o-	Blood	Hematopoiesis
Hepat/o-, Hepatico-	Liver	Hepatic portal system
Hist/o-, Histio-	Tissue	Histology
Hyster/o-	Uterus	Hysterectomy
Ileo-	Ileum	Ileostomy
Ischi/o-	Ischium	Ischial tuberosity
Kerat/o-	Corena (eye or skin)	Keratin

Lacrim/o-	Tear (from your eyes)	Lacrimal fluid
Lact/o-, Lacti-	Milk	Lactose
Laryng/o-	Larynx	Laryngitis
Lingu/o-	Tongue	Lingual tonsil
Lip/o-	Fat	Lipolysis
Lymph/o-	Lymph	Lymphocyte
Mamm-, Mast/o-	Breast	Mammary glands
Mening/o-	Meninges	Meningitis
Muscul/o-	Muscle	Musculoskeletal
My/o-	Muscle	Myocardium
Myel/o-	Spinal cord or bone marrow	Myelin
Nephr/o-	Kidney	Nephron
Neur/i-, Neur/o-	Nerve	Neuron
Oculo-	Eye	Oculomotor nerve
Onco-	Tumor; Bulk; Volume	Oncogene
Onych/o-	Fingernail; Toenail	Onychodystrophy
Oo-	Egg; Ovary	Oocyte
Oophor/o-	Ovary	Oophorectomy
Op-, Opt-	Vision	Optic nerve
Ophthalm/o-	Eye	Ophthalmic artery
Orchid/o-, Orchio-	Testis	Orchidectomy

Orth/o-	Straight; Normal; Correct	Orthostatic
Osseo-	Bony	Osseous tissue
Ossi-	Bone	Ossicles
Ost-, Oste/o-	Bone	Osteoporosis
Ot/o-	Ear	Otolaryngologist
Ovar/i-, Ovario-, Ovi-, Ovo-	Ovary	Ovarian follicle
Phalang-	Phalanx	Phalanges
Pharyng/o-	Pharynx; Throat	Pharyngeal tonsil
Phleb/o-	Vein	Phlebotomist
Phren/i-, Phreno-, Phrenico-	Diaphragm	Phrenic nerve
Pleur-, Pleur/a-, Pleur/o-	Rib, pleura	Pleural cavity
Pneum/a- Pneumat/o-	Air; Lung	Pneumonia
Proct/o-	Anus; Rectum	Proctoscopy
Prostat-	Prostate	Prostatectomy
Pseudo-	False	Pseudostratified
Psych/o-, Psyche-	Mind	Psychiatrist
Radio-	Radiation; Radius	Radioisotopes
Ren/o-	Kidney	Renal cortex
Retin-	Retina (of the eye)	Retinitis pigmentosa
Rhin/o-	Nose	Rhinoscope

Salping/o-	Tube	Salpingo-oophorectomy
Sarco-	Muscular; Flesh-like	Sarcomere
Schiz/o-	Split; Cleft	Schizophrenia
Sclera-, Sclero-	Hardness	Sclerosis
Sigmoid/o-	Sigmoid colon	Sigmoidoscopy
Sperma-, Spermo-, Spermato-	Sperm	Spermatocyte
Splen/o-	Spleen	Splenomegaly
Sten/o-	Narrowed; Blocked	Stenosis
Stern-	Sternum	Sternoclavicular joint
Stom/a-, Stomat/o-	Mouth	Stomatitis
Thorac/o-, Thoracico-	Chest	Thoracic cavity
Thromb/o-	Blood clot	Thrombolytic
Thyr/o-	Thyroid gland	Thyroiditis
Trache/o-	Trachea	Trachealis
Tympan/o-	Eardrum	Tympanic membrane
Ur/o-	Urine	Urologist
Vagin-	Vagina	Vaginal
Varic/o-	Duct; Blood vessel	Varicose veins
Vasculo-	Blood vessel	Vasculitis
Ven/o-	Vein	Venae cavae
Vertbr-	Vertebra; Spine	Vertebral column

Color Prefixes

PREFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
Chlor/o-	Green	Chlorophyll
Chrom-, Chromato-	Color	Chromosome
Cyano-	Blue	Cyanosis
Erythr/o-	Red	Erythrocyte
Leuk/o-	White	Leukocyte
Melan/o-	Black	Melanin

Physical Property and Shape Prefixes

PREFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
Cry/o-	Cold	Cryotherapy
Elect-	Electrical activity	Electrocardiogram
Kin/o-, Kine-, Kinesi/o-	Movement	Kinetic energy
Kyphy/o-	Humped	Kyphosis
Rhabd/o-	Rod-shaped; Striated	Rhabdomyosarcoma
Phot/o-	Light	Photoreceptor
Reticul/o-	Net	Reticulocytes
Scoli/o-	Twisted	Scoliosis
Therm/o-	Heat	Thermotherapy

Direction and Position Prefixes

PREFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS

Ab-, Abs-	Away from	Abductor
Ad-	Towards	Adductor
Ante-	Before; Forward	Antenatal
Circum-	Around	Circumcision
Cycl-	Circle; Cycle	Cyclic neutropenia
De-	Away from; Ending	Dehydration
Dia-	Across; Through	Diagnosis
Ect/o-, Exo-	Outer; Outside	Exocrine gland
End/o-, Ent-, Enter/o-	Within; Inner	Endocrine gland
Epi-	Upon; Outside of	Epidermis
Ex-, Extra-	Beyond	Expiration
Infra-	Beneath; Below	Infratemporal fossa
Inter-	Between	Interstitial fluid
Intra-	Within	Intracellular fluid
Meso-	Middle	Mesoderm
Meta-	Beyond; Change	Metabolism
Para-	Alongside; Abnormal	Parathyroid glands
Path/o-	Disease	Pathologist
Peri-	Around	Pericardium
Post-	Behind; After	Postpartum
Pre-	Before; In front	Precancerous
Retro-	Backward; Behind	Retroperitoneum
Sub-	Under	Subcutaneous layer

Super-	Above	Superior
Supra-	Above; Upon	Supraglottis
Sy-, Syl-, Sym-, Syn-, Sys-	Together	Syndrome
Trans-	Across; Through	Transdermal

Quantity Prefixes

PREFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
Bi-	Two	Biceps
Brady-	Slow	Bradycardia
Diplo-	Double	Diploid
Hemi-	Half	Hemihypertrophy
Hetero-	Other; Different	Heterogeneous
Homo-	Same	Homozygous genotype
Hyper-	Above; Beyond; Excessive	Hypertension
Hypo-	Under; Deficient	Hypotension
Iso-	Equal; Like	Isointense
Macro-	Large; Long; Big	Macrophage
Mic-, Micro-	Small	Microglia
Mon-, Mono-	One	Monocyte
Olig/o-	Few; Little	Oliguria
Poly-	Many; Excessive	Polyuria
Quadri-	Four	Quadriceps

Semi-	Half	Semilunar valves
Tachy-	Fast	Tachycardia
Tetra-	Four	Tetralogy of Fallot
Tri-	Three	Triceps
Uni-	One	Unicellular

Reference

Anonymous 2022. Prefix. https://ecampusontario.pressbooks.pub/medicalterminology/chapter/play/. Retrieved July 1, 2022.

Suffix

Suffixes are word parts that are located at the end of words. Suffixes can alter the meaning of medical terms. It is important to spell and pronounce suffixes correctly.
Suffixes in medical terms are common to English language suffixes. Suffixes are not always explicitly stated in the definition of a word. It is common that suffixes will not be explicitly stated when defining a medical term in the workplace. However, when transcribing or reading medical reports the suffix is always clearly written. In order to properly spell and pronounce medical terms, it is helpful to learn the suffixes.

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-a	noun ending, no meaning	leukoderma
-ac	pertaining to	cardiac
-ad	toward	dorsad
-algia	pain	myalgia
-amnios	amnion, amniotic fluid	oligohydramnios
-apheresis	removal	plasmapheresis
-ar	pertaining to	appendicular
-ary	pertaining to	coronary
– asthenia	weakness	Myasthenia gravis

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-carcinoma	cancerous tumour	adenocarcinoma
-cele	hernia, protrusion, swelling	hydrocele
-centesis	surgical puncture to aspirate fluid	amniocentesis
-crine	to secrete	exocrine
-cyesis	pregnancy	pseudocyesis
-cyte	Cell	Leukocyte
SUFFIX	**MEANING**	**EXAMPLE OF USE IN MEDICAL TERMS**

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-desis	surgical fixation, fusion	arthrodesis
-drome	run, running	syndrome

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-e	noun ending, no meaning	neonate
-eal	pertaining to	esophageal
-ectasis	stretching out, dilation, expansion	bronchiectasis
-ectomy	excision, surgical removal, cut out	gastrectomy
-emesis	Vomiting	hematemesis
-emia	in the blood	anemia
-esis	condition	diuresis

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-gen	substance or agent that produces or causes	teratogen
-genic	producing, originating, causing	carcinogenic
-gram	the record, radiographic image	electrocardiogram
-graph	instrument used to record; the record	electrocardiograph
-graphy	process of recording, radiographic imaging	electrocardiography

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-ia	condition of, diseased state, abnormal state	tachycardia
-iasis	condition	choledocholithiasis

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-iatrist	specialist	psychiatrist
-iatry	specialty, treatment	psychiatry
-ic	pertaining to	cardiac
-ictal	seizure, attack	postictal
-ior	pertaining to	anterior
-ism	state of	hyperthyroidism
-itis	inflammation	colitis

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-logist	specialist who studies and treats	oncologist
-logy	study of	cardiology
-lysis	separating, loosening, dissolution	thrombolysis

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-malacia	softening	chondromalacia
-megaly	enlarged, enlargement	gastromegaly
-meter	instrument used to measure	thermometer
-metry	measuring, process of measuring	spirometry

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-oid	resembling	lipoid
-oma	tumour, swelling	melanoma
-opia	vision	diplopia
-opsy	viewing, process of viewing	biopsy
-osis	abnormal condition, increased number (blood)	erythrocytosis

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-ous	pertaining to	intravenous

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-paresis	slight paralysis	hemiparesis
-pathy	disease	polyneuropathy
-penia	abnormal reduction in number	erythrocytopenia
-pepsia	digestion	dyspepsia
-pexy	surgical fixation, suspension	colpopexy
-phagia	swallowing, eating	dysphagia
-phobia	aversion, abnormal fear	photophobia
-physis	Growth	symphysis
-plasia	formation, development, growth	hyperplasia
-plasm	growth, substance, formation	cytoplasm
-plasty	surgical repair	rhinoplasty
-plegia	Paralysis	ophthalmoplegia
-pnea	breathing	dyspnea
-poiesis	formation	leukopoiesis
-ptosis	prolapse, drooping	nephroptosis

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-rrhage	excessive bleeding	hemorrhage
-rrhagia	excessive bleeding,	rhinorrhagia
-rrhaphy	repairing, suturing	cholecystorrhaphy
-rrhea	discharge, flow	rhinorrhea
-rrhexis	Rupture	amniorrhexis

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-salpinx	fallopian tube, uterine tube	pyosalpinx
-sarcoma	malignant tumour	rhabdomyosarcoma
-schisis	split, fissure	cranioschisis
-sclerosis	hardening	arteriosclerosis
-scope	instrument used for visual examination	hysteroscope
-scopic	pertaining to visual examination	pelviscopic
-scopy	process of visually examining	gastroscopy
-spasm	sudden, involuntary contraction of muscle	vasospasm
-stasis	stop, control, standing	hemostasis
-stenosis	constriction, narrowing	ureterostenosis
-stomy	creation of artificial opening	nephrostomy

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-thorax	chest cavity, chest	hemothorax
-tocia	labour, birth	dystocia
-tome	instrument used to cut	dermatome
-tomy	incision, cut into	laparotomy
-tripsy	surgical crushing	cholecystolithotripsy
-trophy	nourishment, development	hypertrophy

SUFFIX	MEANING	EXAMPLE OF USE IN MEDICAL TERMS
-um	no meaning	endocardium
-uria	urine, urination	nocturia
-us	no meaning	microcephalus

Reference

Anonymous 2022. Suffix. https://ecampusontario.pressbooks.pub/medicalterminology/chapter/suffix/. Retrieved July 1, 2022.

SUFFIXES THAT INDICATE MEDICAL SPECIALTY

Suffix	Pronunciation	Meaning
-iatrics,-iatry	ī-ă-trĭks, ī-ă-trē	field of medicine
-iatrist,-ician,-ist	ī-ă-trĭst, ĭ-shŭn, ĭst	specialist
-logist,-ologist	lō-jĭst, ŏl-ō-jĭst	specialist in the study of
-logy,-ology	lō-jē, ŏl-ō-jē	study of

SUFFIXES THAT INDICATE SURGERIES, PROCEDURES, OR TREATMENTS

Suffix	Pronunciation	Meaning
-centesis	sĕn-tē-sĭs	surgical puncture
-cidal,-cide	sī-dăl, sīd	destroying, killing
-desis	dē-sĭs	surgical fixation of bone or joint, binding, tying together
-dilation	dī-lā-shŭn	widening, stretching, expanding
-ectomy	ĕk-tō-mē	excision, surgical removal
-graphy	gră-fē	process of recording
-metry	mĕ-trē	measurement
-pexy	pĕk-sē	surgical fixation
-plasty	plăs-tē	surgical repair
-rrhaphy	ră-fē	suture, suturing
-scopy	skō-pē	visual examination
-therapy	thĕr-ă-pē	treatment
-tomy	tō-mē	cutting into, incision
-tripsy	trĭp-sē	crushing

SUFFIXES THAT INDICATE SENSORY EXPERIENCE, SENSATION, OR SUBJECTIVE FEELING

Suffix	Pronunciation	Meaning
-acusia,-acusis,-cusis	a-koo-zē-ă, ă-koo-sĭs, koo-sĭs	hearing
-algesia,-algesic,-algia,-dynia	ăl-jē-zē-ă, ăl-jē-zĭk, ăl-jē-ă, dĭ-nē-ă	pain
-dipsia	dĭp-sē-ă	thirst
-esthesia	ĕs-thē-zē-ă	sensation
-opia,-opsia,-opsis,-opsy	ō-pē-ă, ŏp-sē-ă, ŏp-sĭs, ŏp-sē	vision, view of
-osmia	ŏz-mē-ă	smell, odor
-phobia	fō-bē-ă	fear
-phoria	fō-rē-ă	feeling

SUFFIXES THAT INDICATE ACTION OR MOVEMENT

Suffix	Pronunciation	Meaning
-clasis,-clast	klăs-ĭs, klăst	to break
-ectasis	ĕk-tă-sĭs	dilation, expansion
-emesis	ĕm-ĕ-sĭs	vomiting
-gen, -genesis, -genic, -genous	jĕn, jĕn-ĕ-sĭs, jĕn-ĭk, jēn-ŭs	creating, producing
-kinesia, -kinesis	kĭ-nē-zē-ă, kĭ-nē-sĭs	movement
-lysis	lĭ-sĭs	destruction
-pause, -stasis	pawz, stă-sĭs	cessation, stopping
-phage, -phagia	fāj, fā-jē-ă	eating, swallowing
-phasia	fā-zē-ă	speech
-rrhage, -rrhagia	rĭj, ră-jē-ă	bursting forth
-rrhea	rē-ă	flow, discharge
-rrhexis	rĕk-sĭs	rupture
-spasm	spă-zŭm	sudden involuntary contraction
-uresis	ū-rē-sĭs	urination

SUFFIXES THAT INDICATE DISEASES, DISORDERS, OR CONDITIONS

Suffix	Pronunciation	Meaning
-cele	sēl	hernia
-constriction	kŏn-strĭk-shŭn	narrowing
-cytosis	sī-tō-sĭs	a condition of cells
-derma	dĕr-mă	skin
-edema	ĕ-dē-mă	swelling
-emia	ē-mē-ă	a condition of the blood
-gravida	gră-vĭ-dă	pregnant woman
-ia,-ism	ē-ă, ĭz-ŭm	condition
-iasis	ī-ă-sĭs	pathological condition or state

Suffix	Pronunciation	Meaning
-it is	ī-tĭs	inflammation
-lepsy,-leptic	lĕp-sē, lĕp-tĭk	seizure
-lith	lĭth	stone
-malacia	mă-lā-sē-ă	softening
-megaly	mĕg-ă-lē	enlargement
-necrosis	nĕ-krō-sĭs	tissue death
-oid	oyd	resembling
-oma	ō-mă	tumor
-osis	ō-sĭs	abnormal condition
-oxia	ŏk-sē-ă	oxygen
-paresis	pă-rē-sĭs	slight or partial paralysis
-partum,-tocia	părt-ŭm, tō-sē-ă	childbirth, labor
-pathy	pă-thē	disease
-penia	pē-nē-ă	deficiency
-pepsia	pĕp-sē-ă	digestion
-phonia	fō-nē-ă	voice
-plasia,-plasm	plā-zē-ă, plăz-ŭm	formation, growth
-plastic	plăs-tĭk	pertaining to formation or growth
-plegia	plē-jē-ă	paralysis
-plegic	plē-jĭk	pertaining to paralysis
-pnea	nē-ă	breathing
-pneic	nē-ĭk	pertaining to breathing
-ptosis	tō-sĭs	drooping, prolapse
-salpinx	săl-pĭnks	uterine (fallopian) tube
-sclerosis	sklĕ-rō-sĭs	hardening
-static	stă-tĭk	not in motion, at rest
-stenosis	stĕ-nō-sĭs	narrowing, stricture
-thorax	thōr-ăks	chest
-trophy	trō-fē	nourishment, growth
-uria	ū-rē-ă	urine

SUFFIXES THAT INDICATE INSTRUMENTS

Suffix	Pronunciation	Meaning
-graph	grăf	recording instrument

Suffix	Pronunciation	Meaning
-meter	mĕ-tĕr	measuring instrument
-scope	skōp	viewing instrument
-tome	tōm	cutting instrument